

**TRIP REPORT
FOR
MACMILLAN RING FREE OIL CO. INC.
SITE REASSESSMENT
600 MACMILLAN ROAD
NORPHLET, UNION COUNTY, ARKANSAS**

Prepared for

U.S. Environmental Protection Agency
Linda Carter, Project Officer
1445 Ross Avenue
Dallas, Texas 75202

Contract No. EP-W-06-042
TDD No. TO-0019-12-03-01
WESTON W.O. No. 20406.012.019.0718.01
NRC No. N/A
FPN N/A
CERCLIS ID ARD008049207
EPA SAM Brenda Nixon Cook
START-3 PTL Michelle Brown

Submitted by

Weston Solutions, Inc.
Robert Beck, VP, P.E., Program Manager
70 NE Loop 410, Suite 600
San Antonio, Texas 78216
(210) 308-4300

28 May 2013

TRIP REPORT

1.0 SITE LOCATION AND DESCRIPTION

The MacMillan Ring Free Oil Company Site is located at 600 MacMillan Road, Norphlet, Union County, Arkansas. The geographic coordinates of the Site are Latitude 33.31000° North, Longitude 92.65833° West. Latitude and Longitude coordinates were measured from the western entrance gate to the facility off of MacMillan Road and were determined using a scaled topographic map and ESRI ArcMap software.

The Site can be reached by traveling 0.4 miles south from Main Street on State Highway 335, then turning left (East) onto MacMillan Road. MacMillan Road dead-ends into the MacMillan Ring Free Oil Company (formerly known as Norphlet Chemical) Site. The Site is bordered by a residential subdivision and the Norphlet Public Schools complex (which includes kindergarten through 12th grade) on the west, a city park and baseball fields to the northwest, and Hayes Creek to the north and east. Railroad tracks run through the Site in an approximate north-south direction. In addition, Massey Creek flows through the Site to the southwest, and the City of Norphlet Wastewater Treatment Ponds and undeveloped woods are located to the south. A Site Layout Map is provided in Attachment A.

The 106-acre property is currently partially fenced along the west side of the property, but there is no fence along the railroad tracks to the east. Major Site features include an office building, laboratory building, boiler building, a 50,000-barrel, bulk crude oil aboveground storage tank (AST), a number of smaller ASTs, a storage building, a fire-water pond, a cannery building, and a drum storage building. Several chemicals are still stored in the cannery and drum storage buildings, but these chemicals are secured and not considered to be a threat to the environment or public. Debris piles consisting of piping, empty drums, and used equipment and parts are located throughout the Site.

Eleven large surface impoundments (referred in historical documents as ponds) were previously located on the south side of the Site and the east side of the railroad tracks. These impoundments all appear to have been backfilled; however, they currently are eight open areas covered with

sparse vegetation. The eight backfilled (formerly surface impoundments) areas have no fencing surrounding them and no berms were observed. Although the Site is partially fenced, the impoundment area and the remainder of the Site are accessible to the general public.

Chemicals associated with the former tank farm and surface impoundments have been identified in a groundwater plume beneath a portion of the Site. Based on previous sampling activities, and given the configuration of the potentiometric surface, off-site plume migration west of the Site is not expected. Migration of the plume east is likely defined by Hayes Creek and Massey Creek.

The Site has a long history of industrial operations that are summarized as follows:

- From 1929 through 1987, the Site operated as a crude oil refinery and manufacturer of lubrication oil and asphalt products. During this time, the Site was called MacMillan Ring Free Oil Company (MacMillan Refinery/Petroleum) (ARD008049207). In 1987, operations ceased due to an involuntary bankruptcy.
- In 1989, the Site was purchased by Nor-Ark Industrial Corporation. Nor-Ark Industrial Corporation offered storage tank leasing for asphalt products. Nor-Ark filed for bankruptcy in 1991.
- In 1999, Norphlet Chemical Storage Inc. purchased the property at an auction. The property included all the land (approximately 106 acres) that was part of the former MacMillan Refinery. The approximate 106 acres that comprised MacMillan Refinery included a 94.8-acre tract of land west of the railroad and the 10.7-acre tract of land east of the railroad.
- In 2004, Norphlet Chemical Storage, Inc. sold the 94.8-acre tract of land to Norphlet Chemical Properties, Inc. or Norphlet Chemicals, Inc. Norphlet Chemicals planned to produce 1,1,2,2-tetrafluoroethane (Freon 134A) refrigerant from anhydrous hydrofluoric acid and trichloroethylene. The plant never operated as intended and filed for bankruptcy in 2008.

2.0 SUMMARY OF ACTIONS

On 10 July 2012, the U.S. Environmental Protection Agency Region 6, Prevention and Response Branch (EPA-PRB) tasked the Superfund Technical Assessment and Response Team (START-3) contractor, Weston Solutions, Inc. (WESTON®), under contract number EP-W-06-042, Technical Direction Document (TDD) No. TO-0019-12-03-01 (Attachment L), to conduct a reassessment of the MacMillan Ring Free Oil Company Site. As part of this tasking, a Quality Assurance Sampling Plan (QASP) and a Health and Safety Plan (HASP) were prepared and approved by the EPA Site Assessment Manager (SAM) prior to mobilization.

On 13 thorough 17 August 2012, the following samples were collected: 9 surface water and 9 sediment samples from locations within Hayes Creek; 11 sediment samples (including 2 duplicates), 8 surface water samples (including 2 duplicates), and 4 soil samples (including 1 duplicate) from overland flow pathways at the Site; 3 groundwater samples; 5 soil waste samples from identified sources on the Site; and 1 water sample of investigation-derived waste (IDW) drummed and stored on the Site and awaiting disposal. In addition, 11 passive soil gas (PSG) samples (including 1 duplicate) were collected between the historical groundwater plume boundary and the Norphlet Public Schools Complex.

The background surface water and sediment samples were collected from a location upstream of the Site within Hayes Creek to determine whether a release of contaminants from the Site could be established. The background groundwater sample was collected upgradient of the Site and historical groundwater plume boundaries.

The surface water samples were collected from shallow depths by submerging the sample container into the water. The mouth of the container was positioned so that it faced upstream, while sampling personnel stood downstream so as not to disturb sediment that could potentially impact the sample. The sediment samples were collected with disposable plastic scoops and transferred to an 8-ounce sample container. The samples were collected from 0 to 1 inch below ground surface (bgs) from locations (such as bends) within the creek where sediments had accumulated. Once collected, both surface water and sediment sample bottles were placed on ice until shipping off-site for analyses. Soil and waste soil samples were collected as grab samples using disposal scoops from 0 to 1 foot.

Two groundwater samples were collected from source locations, and one background sample was collected upgradient (north) from existing monitoring wells. Samples were collected using low-flow sampling techniques and a submersible pump. During sampling, the pH, specific conductivity, and temperature were measured throughout purging activities and recorded. Purging was considered complete when the physical measurements stabilized (typically +/- 0.5 pH units, +/- 10% specific conductivity, and 1° C temperature), and when the evacuated water appeared to be free of sediment. One monitoring well location (MW-1) contained non-aqueous phase liquid (NAPL) and was sampled using a bailer.

PSG samples were collected by drilling a hole into the soil 3 feet bgs and placing the subsurface sampling cartridge into the hole. Once the cartridge was placed into the hole, the hole was sealed with aluminum foil and covered with soil. The cartridges were left in place for 7 days. The samples were collected according to the QASP approved by the EPA SAM. Sampling activities were recorded in field logbooks. Sample locations are illustrated on the Sample Location Map in Attachment B.

The water, soil, and sediment samples were analyzed for Target Compound List (TCL) volatile organic compounds (VOCs), TCL semivolatile organic compounds (SVOCs), pesticides, and polychlorinated bi-phenyls (PCBs), by the Contract Laboratory Program (CLP) Statement of Work (SOW) for Multi-Media, Multi-Concentration Organic Analysis, OLM04.2, and Target Analyte List (TAL) metals with mercury by CLP SOW Multi-Media, Multi-Concentration Inorganics Analysis, ISM05.3. A subset of these samples, 5 surface water, 5 sediment, 1 groundwater, and 2 soil samples were analyzed for hexavalent chromium by EPA Method SW846 7196A. The PSG samples were analyzed for VOCs by EPA Method SW846 8260C. All water, soil, and sediment samples were submitted to the EPA Region 6 Environmental Services Branch Laboratory located in Houston, Texas. The hexavalent chromium samples were submitted to the Test America Incorporated Laboratory located in Savannah, Georgia. The PSG samples were submitted to the Beacon Environmental Services Laboratory located in Bel Air, Maryland. All samples and a chain-of-custody were shipped via Federal Express by overnight delivery.

Final analytical results were received from the laboratories between 23 August and 22 January 2013. A summary of analytical results for the samples (except the PSG samples) is presented in Attachment D. The summary separates the samples into their respective HRS-defined areas: source samples, observed release samples, and overland flow samples. A complete listing of the analytical data (except the PSG samples), separated out by media (HRS-defined areas), is presented in Attachment E.

Based on the analytical results, an observed release to the surface water pathway has been documented. Attachment C shows which samples contain Level II concentrations.

A wetland survey was conducted on 16 August 2012 at a former stormwater retention pond adjacent to Hayes Creek and east of East Hayes Road. The surveyed area is east of the MacMillan Ring Free Oil Company Site and downstream of a potential point of discharge from the subject property. The survey was conducted to evaluate approximately 26,250 square feet (0.603 acres) for wetland characteristics directly adjacent to the creek. Based on a review of the published material and the observations made during the survey, the area within the former man-made stormwater retention pond, under normal circumstances, does function as a wetland. The Wetland Evaluation is included in Attachment F.

Photographic documentation is included as Attachment G and logbook documentation as Attachment H. EPA Region 6, Test America, and Beacon Environmental Services analytical reports are included as Attachments I, J, and K, respectively.

3.0 LIST OF ATTACHMENTS

- A. Site Layout Map
- B. Sample Location Map
- C. Surface Water Pathway Map
- D. Summary of Analytical Results
- E. Complete Analytical Results
- F. Wetland Evaluation Memorandum
- G. Digital Photographs
- H. Site Logbooks
- I. Analytical Report - Region 6 Laboratory
- J. Analytical Report - Test America Laboratory
- K. Analytical Report - Beacon Environmental Services Laboratory
- L. TDD No. TO-0019-12-03-01 and Amendments

ATTACHMENT A
SITE LAYOUT MAP



0 550 1,100
Feet

LEGEND

- FORMER IMPOUNDMENTS
- SITE BOUNDARY
- FORMER TANK FARM



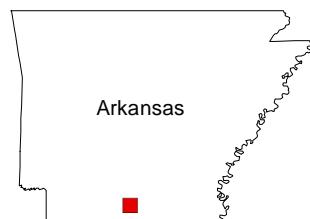
US EPA REGION 6

ATTACHMENT A
SITE LAYOUT MAP
MACMILLAN RING FREE OIL CO. INC.
600 MACMILLAN RD
NORPHLET, UNION COUNTY, ARKANSAS

DATE	PROJECT NO	SCALE
APRIL, 2013	20406.012 050008	AS SHOWN

TDD NO: TO-0019-12-03-01
CERCLIS NO: ARD008049207

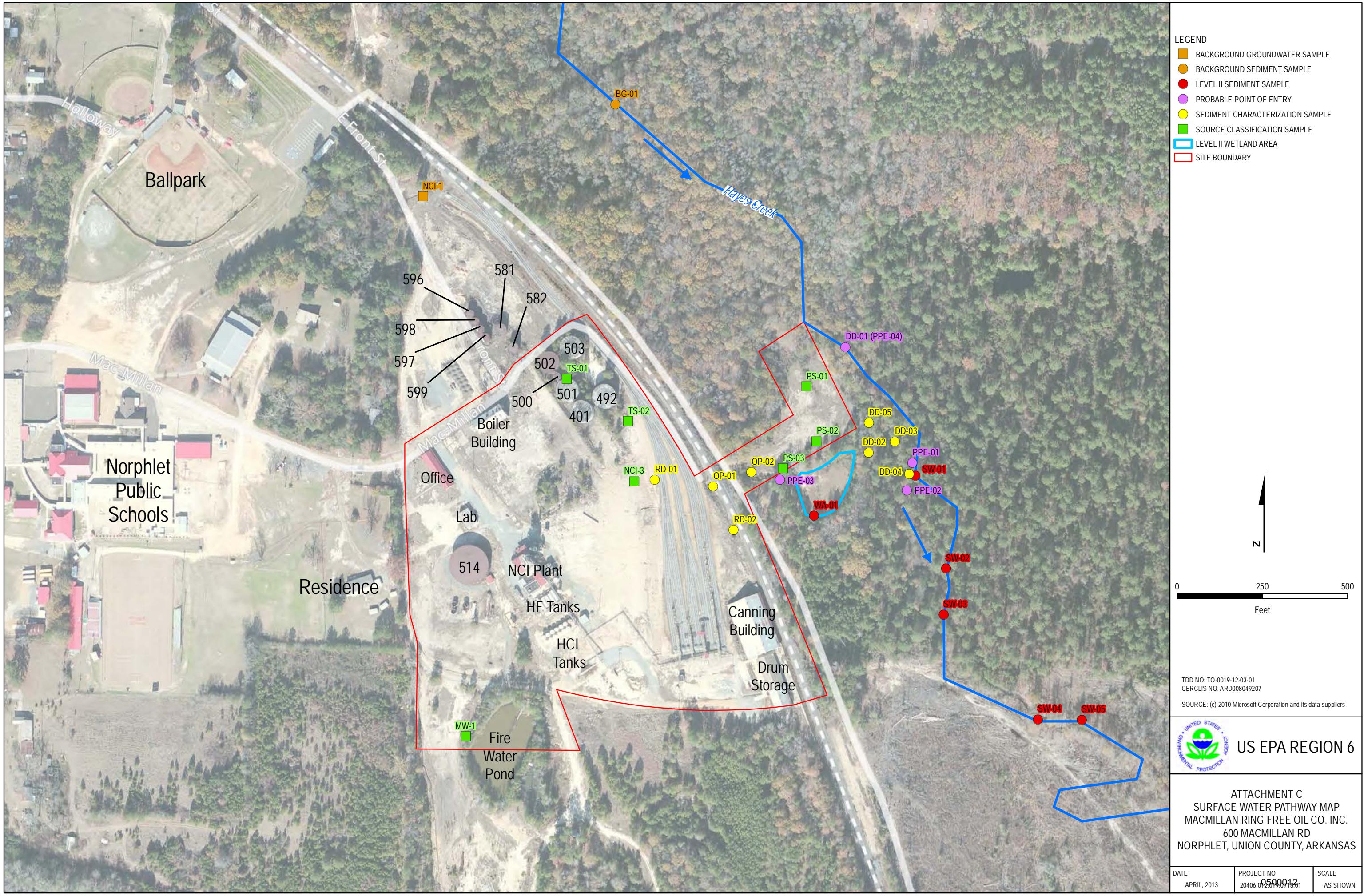
SOURCE: © 2011 National Geographic Society, i-cubed



ATTACHMENT B
SAMPLE LOCATION MAP



ATTACHMENT C
SURFACE WATER PATHWAY MAP



ATTACHMENT D
SUMMARY OF ANALYTICAL RESULTS

Table 1
Source Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Groundwater Plume MW-1-120816-21 08/16/2012 Field Sample	Groundwater Plume NCI-3-120816-21 08/16/2012 Field Sample	Pit 01 PS-01-03-51 08/15/2012 Field Sample	Pit 02 PS-02-03-51 08/15/2012 Field Sample	Pit 03 PS-03-03-51 08/15/2012 Field Sample
Metals							
Aluminum	ppb	--	45400 J	2910	3860000	1680000	2140000
Arsenic	ppb	--	90 U	2	1800	1200	1300
Barium	ppb	--	300	15.3	66700	55900	37600
Beryllium	ppb	--	50 U	29.1	500 U	500 U	500 U
Cadmium	ppb	--	50 U	10	500 U	500 U	500 U
Calcium	ppb	--	6000 B	195000	1120000	794000	655000
Chromium	ppb	--	600	10 U	8600	3500	3100
Chromium, hexavalent	ppb	--		3.6 J	1100 U	2900	
Cobalt	ppb	--	200 U	606	2800	2000 U	2100 U
Copper	ppb	--	300	20 U	13900	7100	7000
Iron	ppb	--	46200	8520	7630000	4640000	5590000
Lead	ppb	--	600	9.9	26000	19500	13100
Magnesium	ppb	--	4500 B	157000	264000	169000	231000
Manganese	ppb	--	70	5220	113000	89800 J	86400
Mercury	ppb	--	66.1 U	0.2 U	223	114	132
Nickel	ppb	--	200 U	264	7300	3600	3300
Potassium	ppb	--	19700 B	11300	272000	131000	172000
Selenium	ppb	--	1800	5.9	500 U	500 U	500 U
Sodium	ppb	--	18200 B	147000	54900 U	50900 U	52300 U
Thallium	ppb	--	100	2 U	500 U	500 U	500 U
Vanadium	ppb	--	1600	20 U	11900	6500	7700
Zinc	ppb	--	600 B	2050	49100	27300	30400
PCBs							
Pesticides							
SVOCs							
2-Methylnaphthalene	ppb	--	3490		159	122	148
Acenaphthene	ppb	--	8460		5.6 U	4.4 U	4.4 U

Table 1
Source Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Groundwater Plume MW-1-120816-21 08/16/2012 Field Sample	Groundwater Plume NCI-3-120816-21 08/16/2012 Field Sample	Pit 01 PS-01-03-51 08/15/2012 Field Sample	Pit 02 PS-02-03-51 08/15/2012 Field Sample	Pit 03 PS-03-03-51 08/15/2012 Field Sample
Acenaphthylene	ppb	--	2740		5.6 U	10.7	4.4 U
Anthracene	ppb	--	11200		18.3	18.8	11.7
Benzo(a)anthracene	ppb	--	9480		87.2	37.2	23.6
Benzo(a)pyrene	ppb	--	2880		61.7	32.8	23.8
Benzo(b and/or k) fluoranthene	ppb	--	2420		163	72.1	59.1
Benzo(g,h,i)perylene	ppb	--	2100		40	37.3	24.9
Chrysene	ppb	--	14700		285	117	92.7
Dibeno(a,h)anthracene	ppb	--	715		11	6.74	4.76
Fluoranthene	ppb	--	4110		83.2	37.8	26.7
Fluorene	ppb	--	6160		5.6 U	4.4 U	4.4 U
Indeno(1,2,3-cd)pyrene	ppb	--	482		22.4	15.7	10.5
Naphthalene	ppb	--	2630		92.7	66.1	77.7
Phenanthrene	ppb	--	9200		148	116	81.5
Pyrene	ppb	--	32800		149	81.7	57.2
Volatiles							
Acetone	ppb	--	12300 U	5 U	14.5 U	34.9 U	10.5 U
Benzene	ppb	--	2460 U	8.6	7.2 U	17.4 U	5.3 U
Cyclohexane	ppb	--	2460 U	2.8	7.2 U	17.4 U	5.3 U
Ethylbenzene	ppb	--	2460 U	3.1	7.2 U	17.4 U	5.3 U
Isopropylbenzene	ppb	--	2460 U	15.1	7.2 U	17.4 U	5.3 U
Methylcyclohexane	ppb	--	2460 U	2.2	7.2 U	17.4 U	5.3 U
ortho-Xylene	ppb	--	2460 U	10.9	7.2 U	17.4 U	5.3 U

Table 1
Source Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Tank Bottom-01	Tank Bottom-02
Metals				
Aluminum	ppb	--	1560000	4420000
Arsenic	ppb	--	1300	1800
Barium	ppb	--	27100	58200
Beryllium	ppb	--	500 U	500 U
Cadmium	ppb	--	500 U	500 U
Calcium	ppb	--	636000	153000
Chromium	ppb	--	1300	4500
Chromium, hexavalent	ppb	--		
Cobalt	ppb	--	2100 U	1900 U
Copper	ppb	--	4800	5300
Iron	ppb	--	3200000	5650000
Lead	ppb	--	10000	9300
Magnesium	ppb	--	130000	145000
Manganese	ppb	--	25400 J	12900
Mercury	ppb	--	62 U	100
Nickel	ppb	--	2100 U	1900 U
Potassium	ppb	--	218000	416000
Selenium	ppb	--	500 U	500 U
Sodium	ppb	--	51900 U	99100
Thallium	ppb	--	500 U	500 U
Vanadium	ppb	--	3000	11100
Zinc	ppb	--	13700	8300
PCBs				
Pesticides				
SVOCs				
2-Methylnaphthalene	ppb	--	12.9 U	16.3
Acenaphthene	ppb	--	12.9 U	13.1 U

Table 1
Source Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Tank Bottom-01 TS-01-03-51 08/15/2012 Field Sample	Tank Bottom-02 TS-02-03-51 08/15/2012 Field Sample
Acenaphthylene	ppb	--	12.9 U	13.1 U
Anthracene	ppb	--	12.9 U	13.1 U
Benzo(a)anthracene	ppb	--	20.5	79.1
Benzo(a)pyrene	ppb	--	25.1	73
Benzo(b and/or k) fluoranthene	ppb	--	245	298
Benzo(g,h,i)perylene	ppb	--	70.3	95.7
Chrysene	ppb	--	1340	1380
Dibeno(a,h)anthracene	ppb	--	18.7	26.9
Fluoranthene	ppb	--	12.9 U	13.1 U
Fluorene	ppb	--	12.9 U	13.1 U
Indeno(1,2,3-cd)pyrene	ppb	--	19.6	33.2
Naphthalene	ppb	--	12.9 U	14.1
Phenanthrene	ppb	--	21.6	30.4
Pyrene	ppb	--	205	200
Volatiles				
Acetone	ppb	--	13.4 U	21.2 J, RL
Benzene	ppb	--	6.7 U	17.9 U
Cyclohexane	ppb	--	6.7 U	17.9 U
Ethylbenzene	ppb	--	6.7 U	17.9 U
Isopropylbenzene	ppb	--	6.7 U	17.9 U
Methylcyclohexane	ppb	--	6.7 U	17.9 U
ortho-Xylene	ppb	--	6.7 U	17.9 U

Table 1A
Source Sample Analytical Results Summary -- Original Data
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Groundwater Plume NCI-3-120816-21 08/16/2012 Field Sample
SVOCs			
2-Methylnaphthalene	ppb	--	4.7
Naphthalene	ppb	--	19.6

Table 2
Overland Flow Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Drainage Ditch-02 DD-02-03-51 08/14/2012 Field Sample	Drainage Ditch-03 DD-03-03-51 08/14/2012 Field Sample	Drainage Ditch-04 DD-04-03-51 08/14/2012 Field Sample	Drainage Ditch-04 DD-04-03-52 08/14/2012 Field Duplicate
Metals						
Aluminum	ppb	--	16500000	7660000	993000	1650000
Arsenic	ppb	--	4500	2800	600 U	700
Barium	ppb	--	127000 K	92000 K	42500 K	47600 K
Calcium	ppb	--	3090000	2430000	292000	661000
Chromium	ppb	--	13600	7300	1700	2200
Cobalt	ppb	--	6500	8500	2400 U	3700
Copper	ppb	--	17000	20600	2900	4600
Iron	ppb	--	17000000	10200000	1470000	2460000
Lead	ppb	--	25100	40000	34900	33200
Magnesium	ppb	--	877000	461000	51800	118000
Manganese	ppb	--	90000	121000	14900	23400
Mercury	ppb	--	224	160	76	76 U
Nickel	ppb	--	12300	10100	2400 U	2700
Potassium	ppb	--	815000	412000	121000 U	120000 U
Sodium	ppb	--	114000 U	153000 U	60700 U	59900 U
Vanadium	ppb	--	33900	19300	3800	5800
Zinc	ppb	--	100000	148000	18500	48600
PCBs						
Pesticides						
4,4'-DDD	ppb	--	2.17 U	3.44 U	4.99	4.45
4,4'-DDT	ppb	--	2.17 U	3.44 U	1.32 U	2.64 U
gamma-Chlordane	ppb	--	2.17 U	3.44 U	1.6	2.64 U
SVOCs						
2-Methylnaphthalene	ppb	--	14	34.8 U	13.5 U	11.7
Acenaphthene	ppb	--	13.5 U	34.8 U	13.5 U	5.6 U
Anthracene	ppb	--	13.5 U	34.8 U	13.5 U	5.6 U
Benzo(a)anthracene	ppb	--	31.2	36.3	25.9	19.8

Table 2
Overland Flow Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Drainage Ditch-02 DD-02-03-51 08/14/2012 Field Sample	Drainage Ditch-03 DD-03-03-51 08/14/2012 Field Sample	Drainage Ditch-04 DD-04-03-51 08/14/2012 Field Sample	Drainage Ditch-04 DD-04-03-52 08/14/2012 Field Duplicate
Benzo(a)pyrene	ppb	--	35.7	34.8 U	35.2	28.4
Benzo(b and/or k) fluoranthene	ppb	--	94.9	63.9	44.3	25.3
Benzo(g,h,i)perylene	ppb	--	23.2	43	45.6	34.3
Chrysene	ppb	--	259	155	101	109
Dibenzo(a,h)anthracene	ppb	--	13.5 U	34.8 U	13.5 U	6.33
Fluoranthene	ppb	--	21.5	34.8 U	38.6	12.4
Indeno(1,2,3-cd)pyrene	ppb	--	14.1	34.8 U	15.3	9.5
Naphthalene	ppb	--	13.5 U	34.8 U	13.5 U	8.46
Phenanthrene	ppb	--	16.2	34.8 U	39	14.3
Pyrene	ppb	--	92.6	83	62.5	36
Volatiles						
2-Butanone	ppb	--	550 U	874 U	341 U	345 U
Acetone	ppb	--	1100 U	1750 U	682 U	691 U

Table 2
Overland Flow Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Drainage Ditch-05 DD-05-03-51 08/16/2012 Field Sample	Drainage Ditch-05 DD-05-03-52 08/16/2012 Field Duplicate	Outlet Pipe-01 OP-01-03-51 08/15/2012 Field Sample	Outlet Pipe-02 OP-02-03-51 08/15/2012 Field Sample	Railroad Ditch-01 RD-01-03-51 08/15/2012 Field Sample
Metals							
Aluminum	ppb	--	7250000	5690000	3880000	2680000	2430000
Arsenic	ppb	--	2100	1500	1900	1300	1000
Barium	ppb	--	101000	70100	57200	111000	37700
Calcium	ppb	--	2890000	2170000	1000000	963000	787000
Chromium	ppb	--	7200	5600	3900	3000	2500
Cobalt	ppb	--	4600	3000	2200 U	2300 U	2100 U
Copper	ppb	--	31900	67800	6100	3400	2100
Iron	ppb	--	7460000	6640000	6220000	4570000	3690000
Lead	ppb	--	21500	20400	8100	7200	4000
Magnesium	ppb	--	553000	456000	245000	218000	174000
Manganese	ppb	--	83800	61900	34400	24100	20700
Mercury	ppb	--	170	78	89	78	63 U
Nickel	ppb	--	11300	7000	2300	2300 U	2100 U
Potassium	ppb	--	382000	327000	162000	161000	104000 U
Sodium	ppb	--	80300 U	62400 U	56200	219000	51900 U
Vanadium	ppb	--	19500	14200	11200	8600	6300
Zinc	ppb	--	201000	84200	15200	42400	7700
PCBs							
Pesticides							
4,4'-DDD	ppb	--	4.64 J	4.48 J	2.34 U	6.11 U	1.21 U
4,4'-DDT	ppb	--	3.45 U	9.2 J	2.34 U	6.11 U	1.21 U
gamma-Chlordane	ppb	--	3.45 U	2.85 U	2.34 U	6.11 U	1.21 U
SVOCs							
2-Methylnaphthalene	ppb	--	20.9 U	32.7	14.1	27 U	11.8 U
Acenaphthene	ppb	--	20.9 U	8.9 U	12.2 U	27 U	11.8 U
Anthracene	ppb	--	20.9 U	8.9 U	12.2 U	71.1	11.8 U
Benzo(a)anthracene	ppb	--	20.9 U	8.9 U	19.4	412	11.8 U

Table 2
Overland Flow Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Drainage Ditch-05 DD-05-03-51 08/16/2012 Field Sample	Drainage Ditch-05 DD-05-03-52 08/16/2012 Field Duplicate	Outlet Pipe-01 OP-01-03-51 08/15/2012 Field Sample	Outlet Pipe-02 OP-02-03-51 08/15/2012 Field Sample	Railroad Ditch-01 RD-01-03-51 08/15/2012 Field Sample
Benzo(a)pyrene	ppb	--	20.9 U	18.4	26.1	135	11.8 U
Benzo(b and/or k) fluoranthene	ppb	--	40.9	32.3	72.4	261	11.8 U
Benzo(g,h,i)perylene	ppb	--	20.9 U	15.8	25.2	75.1	11.8 U
Chrysene	ppb	--	118	165	122	1600	38.4
Dibenzo(a,h)anthracene	ppb	--	20.9 U	8.9 U	12.2 U	28.1	11.8 U
Fluoranthene	ppb	--	20.9 U	8.9 U	15.1	289	11.8 U
Indeno(1,2,3-cd)pyrene	ppb	--	20.9 U	8.9 U	14.8	31.5	11.8 U
Naphthalene	ppb	--	20.9 U	32.6	12.2 U	27 U	11.8 U
Phenanthrene	ppb	--	20.9 U	33.6	24.2	37.6	11.8 U
Pyrene	ppb	--	40.3	35	36.5	2020	13.4
Volatiles							
2-Butanone	ppb	--	438 U	364 U	316 U	305 U	5.5 U
Acetone	ppb	--	875 U	728 U	632 U	610 U	11 U

Table 2
Overland Flow Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Railroad Ditch-02 RD-02-03-51 08/15/2012 Field Sample	Railroad Ditch-02 RD-02-03-52 08/15/2012 Field Duplicate
Metals				
Aluminum	ppb	--	1490000	1760000
Arsenic	ppb	--	1500	1400
Barium	ppb	--	56900	82100
Calcium	ppb	--	318000	617000
Chromium	ppb	--	3800	2900
Cobalt	ppb	--	2100 U	2000 U
Copper	ppb	--	3700	5800
Iron	ppb	--	6150000	6960000
Lead	ppb	--	13700	19800
Magnesium	ppb	--	70800	119000
Manganese	ppb	--	23600	28300
Mercury	ppb	--	186	143
Nickel	ppb	--	2100 U	2000 U
Potassium	ppb	--	110000	166000
Sodium	ppb	--	52100 U	51200 U
Vanadium	ppb	--	5300	5400
Zinc	ppb	--	21800	50600
PCBs				
Pesticides				
4,4'-DDD	ppb	--	5.08 U	4.8 U
4,4'-DDT	ppb	--	5.08 U	4.8 U
gamma-Chlordane	ppb	--	5.08 U	4.8 U
SVOCs				
2-Methylnaphthalene	ppb	--	94.9	224
Acenaphthene	ppb	--	90.9	59.6
Anthracene	ppb	--	155 U	100 U
Benzo(a)anthracene	ppb	--	383	276

Table 2
Overland Flow Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID Date Sample Type	Railroad Ditch-02 RD-02-03-51 08/15/2012 Field Sample	Railroad Ditch-02 RD-02-03-52 08/15/2012 Field Duplicate
Benzo(a)pyrene	ppb	--	201	117
Benzo(b and/or k) fluoranthene	ppb	--	472	337
Benzo(g,h,i)perylene	ppb	--	123	102
Chrysene	ppb	--	1750	1410
Dibenzo(a,h)anthracene	ppb	--	51.6 U	50.2 U
Fluoranthene	ppb	--	75.4	50.2 U
Indeno(1,2,3-cd)pyrene	ppb	--	64.6	51.8
Naphthalene	ppb	--	51.6 U	50.2 U
Phenanthrene	ppb	--	155 U	100 U
Pyrene	ppb	--	966	664
Volatiles				
2-Butanone	ppb	--	6 B	5.4 B
Acetone	ppb	--	16.9 B, J	19.5 B, J

Table 2A
Overland Flow Sample Analytical Results Summary -- Original Data
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Location Sample ID	Outlet Pipe-02
		Date	OP-02-03-51
		Sample Type	08/15/2012
SVOCs			
Chrysene	ppb	--	3480
Pyrene	ppb	--	2360 NJ

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID	Background	Probable Point of Entry-01	Probable Point of Entry-02
			Date	BG-01-03-51 08/16/2012 Field Sample	PPE-01-03-51 08/14/2012 Field Sample	PPE-02-03-51 08/14/2012 Field Sample
Metals						
Aluminum	ppb	1602000	--	534000	3580000	1800000
Arsenic	ppb	600	--	600 U	800	900
Barium	ppb	16100	--	16100 K	187000 K	82300 K
Cadmium	ppb	4800	--	1600	500 U	600 U
Calcium	ppb	312000	--	104000	505000	597000
Chromium	ppb	1200	--	1200 U	3400	2600
Chromium, hexavalent	ppb	1500	--	1500 U	2300	1300 U
Cobalt	ppb	2400	--	2400 U	4100	2500
Copper	ppb	2400	--	2400 U	2100 U	2400 U
Iron	ppb	2439000	--	813000	5340000	4330000
Lead	ppb	26400	--	8800	8300	18100
Magnesium	ppb	110100	--	36700	248000	149000
Manganese	ppb	7500	--	2500	122000	48700
Mercury	ppb	66	--	66 U	57 U	54 U
Nickel	ppb	2400	--	2400 U	2100 U	2400 U
Potassium	ppb	118000	--	118000 U	115000	120000 U
Sodium	ppb	59000	--	59000 U	402000	131000
Vanadium	ppb	8100	--	2700	12000	10400
Zinc	ppb	31500	--	10500	3400	14800
PCBs						
Aroclor-1242	ppb	52.4	--	52.4 U	25.8 U	57.8 U
Pesticides						
4,4'-DDD	ppb	2.62	--	2.62 U	1.29 U	3.37
SVOCs						
2-Methylnaphthalene	ppb	4.05	--	1.35		31.9
Acenaphthene	ppb	1.14	--	0.38		24.4 U
Acenaphthylene	ppb	0.6	--	0.2		24.4 U

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Background	Probable Point of Entry-01	Probable Point of Entry-02
Anthracene	ppb	1.32	--	0.44		24.9
Benzo(a)anthracene	ppb	7.68	--	2.56		97.5
Benzo(a)pyrene	ppb	10.23	--	3.41		44
Benzo(b and/or k) fluoranthene	ppb	21.99	--	7.33		54.9
Benzo(g,h,i)perylene	ppb	10.65	--	3.55		41.7
Chrysene	ppb	31.5	--	10.5		228
Dibenzo(a,h)anthracene	ppb	2.7	--	0.9		24.4 U
Fluoranthene	ppb	12.24	--	4.08		38.1
Fluorene	ppb	0.84	--	0.28		24.4 U
Indeno(1,2,3-cd)pyrene	ppb	4.62	--	1.54		24.4 U
Naphthalene	ppb	5.88	--	1.96		26.7
Phenanthrene	ppb	8.94	--	2.98		40.2
Pyrene	ppb	24.15	--	8.05		225
Volatiles						

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Probable Point of Entry-03 PPE-03-03-51 08/15/2012 Field Sample	Probable Point of Entry-04 DD-01-03-51 08/14/2012 Field Sample	Surface Water-01 SED-01-03-51 08/14/2012 Field Sample
Metals						
Aluminum	ppb	1602000	--	3710000	2390000	3140000
Arsenic	ppb	600	--	1600	1100	600 U
Barium	ppb	16100	--	74900	116000 K	53700 K
Cadmium	ppb	4800	--	600 U	1100 U	600 U
Calcium	ppb	312000	--	1030000	855000	875000
Chromium	ppb	1200	--	4200	3400	3100
Chromium, hexavalent	ppb	1500	--	1300 U	1600 U	
Cobalt	ppb	2400	--	2200 U	5600	2500
Copper	ppb	2400	--	3400	7000	2400 U
Iron	ppb	2439000	--	6070000	5040000	2560000
Lead	ppb	26400	--	8500	128000	6400
Magnesium	ppb	110100	--	235000	206000	329000
Manganese	ppb	7500	--	36200	80900	55100
Mercury	ppb	66	--	87	102 U	63 U
Nickel	ppb	2400	--	2400	4200 U	2400 U
Potassium	ppb	118000	--	182000	212000 U	139000
Sodium	ppb	59000	--	55800 U	252000	369000
Vanadium	ppb	8100	--	11000	8600	6200
Zinc	ppb	31500	--	19600	59000	3700
PCBs						
Aroclor-1242	ppb	52.4	--	123 U	60.2 U	25.2 U
Pesticides						
4,4'-DDD	ppb	2.62	--	6.14 U	5.44	1.26 U
SVOCs						
2-Methylnaphthalene	ppb	4.05	--	8.28	3.25	
Acenaphthene	ppb	1.14	--	7.5 U	0.61	
Acenaphthylene	ppb	0.6	--	7.5 U	0.48	

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Probable Point of Entry-03	Probable Point of Entry-04	Surface Water-01
Anthracene	ppb	1.32	--	7.5 U	1.31	
Benzo(a)anthracene	ppb	7.68	--	22.9	11.6	
Benzo(a)pyrene	ppb	10.23	--	22	11.4	
Benzo(b and/or k) fluoranthene	ppb	21.99	--	57.5	19.3	
Benzo(g,h,i)perylene	ppb	10.65	--	14.1	14.6	
Chrysene	ppb	31.5	--	148	41.4	
Dibenzo(a,h)anthracene	ppb	2.7	--	7.5 U	3.67	
Fluoranthene	ppb	12.24	--	16	8.92	
Fluorene	ppb	0.84	--	7.5 U	0.95	
Indeno(1,2,3-cd)pyrene	ppb	4.62	--	9.91	5.38	
Naphthalene	ppb	5.88	--	7.5 U	3.67	
Phenanthrene	ppb	8.94	--	21.4	8.72	
Pyrene	ppb	24.15	--	91.4	29.7	
Volatiles						

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Surface Water-02 SED-02-03-51 08/14/2012 Field Sample	Surface Water-03 SED-03-03-51 08/14/2012 Field Sample	Surface Water-04 SED-04-03-51 08/16/2012 Field Sample	Surface Water-05 SED-05-03-51 08/16/2012 Field Sample
Metals							
Aluminum	ppb	1602000	--	2870000	1700000	2610000	693000
Arsenic	ppb	600	--	800	700	1100	600 U
Barium	ppb	16100	--	57800 K	69700 K	229000	33200
Cadmium	ppb	4800	--	700 U	700 U	600 U	600 U
Calcium	ppb	312000	--	588000	1000000	724000	377000
Chromium	ppb	1200	--	3200	2300	2500	1200 U
Chromium, hexavalent	ppb	1500	--				
Cobalt	ppb	2400	--	6000	3300	2400 U	2400 U
Copper	ppb	2400	--	4800	3600	2400 U	2400 U
Iron	ppb	2439000	--	2960000	3640000	5430000	1380000
Lead	ppb	26400	--	24000	37800	9700	16300
Magnesium	ppb	110100	--	202000	144000	256000	63000
Manganese	ppb	7500	--	23300	24400	32300	12600
Mercury	ppb	66	--	132	83	56 U	63 U
Nickel	ppb	2400	--	3800	2700 U	2400 U	2400 U
Potassium	ppb	118000	--	179000	133000 U	118000 U	121000 U
Sodium	ppb	59000	--	178000	142000	266000	86400
Vanadium	ppb	8100	--	8800	6800	11800	3300
Zinc	ppb	31500	--	42800	42800	7800	17200
PCBs							
Aroclor-1242	ppb	52.4	--	59.5 U	49.6 U	51.2 U	17.4 J
Pesticides							
4,4'-DDD	ppb	2.62	--	2.98 U	9.15 J	2.56 U	6.11 U
SVOCs							
2-Methylnaphthalene	ppb	4.05	--	215	52.8	5.3 U	12.8
Acenaphthene	ppb	1.14	--	706	15.7 U	5.3 U	5.5 U
Acenaphthylene	ppb	0.6	--	386	15.7 U	5.3 U	5.5 U

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Surface Water-02 SED-02-03-51 08/14/2012 Field Sample	Surface Water-03 SED-03-03-51 08/14/2012 Field Sample	Surface Water-04 SED-04-03-51 08/16/2012 Field Sample	Surface Water-05 SED-05-03-51 08/16/2012 Field Sample
Anthracene	ppb	1.32	--	530	26.4	5.3 U	6.05
Benzo(a)anthracene	ppb	7.68	--	1010	110	5.3 U	28.6
Benzo(a)pyrene	ppb	10.23	--	433	90.1	5.3 U	25.4
Benzo(b and/or k) fluoranthene	ppb	21.99	--	422	147	5.3 U	32.9
Benzo(g,h,i)perylene	ppb	10.65	--	368	104	5.3 U	14.5
Chrysene	ppb	31.5	--	1800	476	12.1	90.5
Dibenzo(a,h)anthracene	ppb	2.7	--	160	25.8	5.3 U	5.5 U
Fluoranthene	ppb	12.24	--	567	23.1	5.3 U	8.53
Fluorene	ppb	0.84	--	1540	15.7 U	5.3 U	5.5 U
Indeno(1,2,3-cd)pyrene	ppb	4.62	--	134	32.5	5.3 U	5.5 U
Naphthalene	ppb	5.88	--	134 U	56.4	5.3 U	15.3
Phenanthrene	ppb	8.94	--	1530	48.9	5.3 U	11.8
Pyrene	ppb	24.15	--	2020	283	8.45	76.1
Volatiles							

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Wetland-01 WA-01-03-51 08/15/2012 Field Sample
Metals				
Aluminum	ppb	1602000	--	2500000
Arsenic	ppb	600	--	1300
Barium	ppb	16100	--	57800
Cadmium	ppb	4800	--	500 U
Calcium	ppb	312000	--	966000
Chromium	ppb	1200	--	3900
Chromium, hexavalent	ppb	1500	--	
Cobalt	ppb	2400	--	2100 U
Copper	ppb	2400	--	2500
Iron	ppb	2439000	--	4450000
Lead	ppb	26400	--	6200
Magnesium	ppb	110100	--	219000
Manganese	ppb	7500	--	47900
Mercury	ppb	66	--	63 U
Nickel	ppb	2400	--	2100 U
Potassium	ppb	118000	--	180000
Sodium	ppb	59000	--	52000 U
Vanadium	ppb	8100	--	8000
Zinc	ppb	31500	--	16400
PCBs				
Aroclor-1242	ppb	52.4	--	42 U
Pesticides				
4,4'-DDD	ppb	2.62	--	2.1 U
SVOCs				
2-Methylnaphthalene	ppb	4.05	--	5
Acenaphthene	ppb	1.14	--	0.35
Acenaphthylene	ppb	0.6	--	0.54

Table 3
Observed Release Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Wetland-01 WA-01-03-51 08/15/2012 Field Sample
Anthracene	ppb	1.32	--	0.73
Benzo(a)anthracene	ppb	7.68	--	4.19
Benzo(a)pyrene	ppb	10.23	--	4.05
Benzo(b and/or k) fluoranthene	ppb	21.99	--	9.51
Benzo(g,h,i)perylene	ppb	10.65	--	4.64
Chrysene	ppb	31.5	--	18.1
Dibenzo(a,h)anthracene	ppb	2.7	--	1.19
Fluoranthene	ppb	12.24	--	2.85
Fluorene	ppb	0.84	--	0.45
Indeno(1,2,3-cd)pyrene	ppb	4.62	--	2.92
Naphthalene	ppb	5.88	--	2.93
Phenanthrene	ppb	8.94	--	3.59
Pyrene	ppb	24.15	--	6.96
Volatiles				

Table 3A
Observed Release Sample Analytical Results Summary -- Original Data
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Location Sample ID Date Sample Type	Drainage Ditch-04 DD-04-00-12-120814 08/14/2012 Field Sample	Sediment-02 SED-02-03-51 08/14/2012 Field Sample
SVOCs					
Bis(2-ethylhexyl)phthalate	ppb	696	--	63.1 J	2520 U
Fluoranthene	ppb	278	--	6.7 U	1030 NJ
Fluorene	ppb	278	--	6.7 U	1600
Phenanthrene	ppb	278	--	6.7 U	2470
Pyrene	ppb	278	--	6.7 U	2520

ATTACHMENT E
COMPLETE ANALYTICAL RESULTS

Table 1
Groundwater Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	NCI-1-120815-21 08/15/2012 Field Sample	NCI-3-120816-21 08/16/2012 Field Sample
Metals					
Aluminum	ug/L	10710	--	3570	2910
Antimony	ug/L	2	--	2 U	2 U
Arsenic	ug/L	16.5	--	5.5	2
Barium	ug/L	372	--	124	15.3
Beryllium	ug/L	15	--	5 U	29.1
Cadmium	ug/L	15	--	5 U	10
Calcium	ug/L	75300	--	25100	195000
Chromium	ug/L	10	--	10 U	10 U
Chromium, hexavalent	ug/L	10	--	10 U	3.6 J
Cobalt	ug/L	20	--	20 U	606
Copper	ug/L	20	--	20 U	20 U
Iron	ug/L	14580	--	4860	8520
Lead	ug/L	12.9	--	4.3	9.9
Magnesium	ug/L	8940	--	2980	157000
Manganese	ug/L	13140	--	4380	5220
Mercury	ug/L	0.2	--	0.2 U	0.2 U
Nickel	ug/L	20	--	20 U	264
Potassium	ug/L	9900	--	3300	11300
Selenium	ug/L	2	--	2 U	5.9
Silver	ug/L	10	--	10 U	10 U
Sodium	ug/L	143400	--	47800	147000
Thallium	ug/L	2	--	2 U	2 U
Vanadium	ug/L	20	--	20 U	20 U
Zinc	ug/L	20	--	20 U	2050
PCBs					
Aroclor-1016	ug/L	0.19	--	0.19 U	0.195 U

Table 1
Groundwater Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	NCI-1-120815-21 08/15/2012 Field Sample	NCI-3-120816-21 08/16/2012 Field Sample
Aroclor-1221	ug/L	0.38	--	0.38 U	0.389 U
Aroclor-1232	ug/L	0.19	--	0.19 U	0.195 U
Aroclor-1242	ug/L	0.19	--	0.19 U	0.195 U
Aroclor-1248	ug/L	0.19	--	0.19 U	0.195 U
Aroclor-1254	ug/L	0.19	--	0.19 U	0.195 U
Aroclor-1260	ug/L	0.19	--	0.19 U	0.195 U
Pesticides					
4,4'-DDD	ug/L	0.009	--	0.009 U	0.01 U
4,4'-DDE	ug/L	0.009	--	0.009 U	0.01 U
4,4'-DDT	ug/L	0.009	--	0.009 U	0.01 U
Aldrin	ug/L	0.009	--	0.009 U	0.01 U
alpha-BHC	ug/L	0.009	--	0.009 U	0.01 U
alpha-Chlordane	ug/L	0.009	--	0.009 U	0.01 U
beta-BHC	ug/L	0.009	--	0.009 U	0.01 U
delta-BHC	ug/L	0.009	--	0.009 U	0.01 U
Dieldrin	ug/L	0.009	--	0.009 U	0.01 U
Endosulfan I	ug/L	0.009	--	0.009 U	0.01 U
Endosulfan II	ug/L	0.009	--	0.009 U	0.01 U
Endosulfan sulfate	ug/L	0.009	--	0.009 U	0.01 U
Endrin	ug/L	0.009	--	0.009 U	0.01 U
Endrin aldehyde	ug/L	0.009	--	0.009 U	0.01 U
Endrin ketone	ug/L	0.009	--	0.009 U	0.01 U
gamma-BHC (Lindane)	ug/L	0.009	--	0.009 U	0.01 U
gamma-Chlordane	ug/L	0.009	--	0.009 U	0.01 U
Heptachlor	ug/L	0.009	--	0.009 U	0.01 U
Heptachlor epoxide	ug/L	0.009	--	0.009 U	0.01 U
Methoxychlor	ug/L	0.009	--	0.009 U	0.01 U

Table 1
Groundwater Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	NCI-1-120815-21 08/15/2012 Field Sample	NCI-3-120816-21 08/16/2012 Field Sample
Toxaphene	ug/L	0.285	--	0.285 U	0.292 U
SVOCs					
2-Methylnaphthalene	ug/L	2	--	2.0 U	4.7
Acenaphthene	ug/L	2	--	2.0 U	1.9 U
Acenaphthylene	ug/L	2	--	2.0 U	1.9 U
Anthracene	ug/L	2	--	2.0 U	1.9 U
Benzo(a)anthracene	ug/L	2	--	2.0 U	1.9 U
Benzo(a)pyrene	ug/L	2	--	2.0 U	1.9 U
Benzo(b and/or k) fluoranthene	ug/L	2	--	2.0 U	1.9 U
Benzo(g,h,i)perylene	ug/L	2	--	2.0 U	1.9 U
Chrysene	ug/L	2	--	2.0 U	1.9 U
Dibenzo(a,h)anthracene	ug/L	2	--	2.0 U	1.9 U
Fluoranthene	ug/L	2	--	2.0 U	1.9 U
Fluorene	ug/L	2	--	2.0 U	1.9 U
Indeno(1,2,3-cd)pyrene	ug/L	2	--	2.0 U	1.9 U
Naphthalene	ug/L	2	--	2.0 U	19.6
Phenanthrene	ug/L	2	--	2.0 U	1.9 U
Pyrene	ug/L	2	--	2.0 U	1.9 U
Volatiles					
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U

Table 1
Groundwater Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	NCI-1-120815-21 08/15/2012 Field Sample	NCI-3-120816-21 08/16/2012 Field Sample
1,2-Dibromoethane	ug/L	1	--	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U
Benzene	ug/L	1	--	1 U	8.6
Bromodichloromethane	ug/L	1	--	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U
Chloroethane	ug/L	1	--	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	2.8
Dibromochloromethane	ug/L	1	--	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	3.1
Isopropylbenzene	ug/L	1	--	1 U	15.1

Table 1
Groundwater Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	NCI-1-120815-21 08/15/2012 Field Sample	NCI-3-120816-21 08/16/2012 Field Sample
meta-/para-Xylene	ug/L	2	--	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	2.2
Methylene chloride	ug/L	2	--	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	10.9
pH	ug/L	6	--	2	2
Styrene	ug/L	3	--	1 U	1 U
Tetrachloroethene	ug/L	3	--	1 U	1 U
Toluene	ug/L	3	--	1 U	1 U
trans-1,2-Dichloroethene	ug/L	3	--	1 U	1 U
trans-1,3-Dichloropropene	ug/L	3	--	1 U	1 U
Trichloroethene	ug/L	3	--	1 U	1 U
Trichlorofluoromethane	ug/L	3	--	1 U	1 U
Vinyl chloride	ug/L	3	--	1 U	1 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-03-51 08/16/2012	RD-01-03-51 08/15/2012	RD-02-03-51 08/15/2012	RD-02-03-52 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Duplicate
Metals							
Aluminum	mg/kg	1602	--	534	2430	1490	1760
Antimony	mg/kg	0.6	--	0.6 U	0.5 U	0.5 U	0.5 U
Arsenic	mg/kg	0.6	--	0.6 U	1	1.5	1.4
Barium	mg/kg	48.3	--	16.1 K	37.7	56.9	82.1
Beryllium	mg/kg	0.6	--	0.6 U	0.5 U	0.5 U	0.5 U
Cadmium	mg/kg	4.8	--	1.6	0.5 U	0.5 U	0.5 U
Calcium	mg/kg	312	--	104	787	318	617
Chromium	mg/kg	1.2	--	1.2 U	2.5	3.8	2.9
Chromium, hexavalent	mg/kg	1.5	--	1.5 U			
Cobalt	mg/kg	2.4	--	2.4 U	2.1 U	2.1 U	2 U
Copper	mg/kg	2.4	--	2.4 U	2.1	3.7	5.8
Iron	mg/kg	2439	--	813	3690	6150	6960
Lead	mg/kg	26.4	--	8.8	4	13.7	19.8
Magnesium	mg/kg	110.1	--	36.7	174	70.8	119
Manganese	mg/kg	7.5	--	2.5	20.7	23.6	28.3
Mercury	mg/kg	0.066	--	0.066 U	0.063 U	0.186	0.143
Nickel	mg/kg	2.4	--	2.4 U	2.1 U	2.1 U	2 U
Potassium	mg/kg	118	--	118 U	104 U	110	166
Selenium	mg/kg	0.6	--	0.6 U	0.5 U	0.5 U	0.5 U
Silver	mg/kg	1.2	--	1.2 U	1 U	1 U	1 U
Sodium	mg/kg	59	--	59 U	51.9 U	52.1 U	51.2 U
Thallium	mg/kg	0.6	--	0.6 U	0.5 U	0.5 U	0.5 U
Vanadium	mg/kg	8.1	--	2.7	6.3	5.3	5.4
Zinc	mg/kg	31.5	--	10.5	7.7	21.8	50.6
PCBs							
Aroclor-1016	mg/kg	0.1572	--	0.0524 U	0.0241 U	0.102 U	0.096 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-03-51 08/16/2012	RD-01-03-51 08/15/2012	RD-02-03-51 08/15/2012	RD-02-03-52 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Duplicate
Aroclor-1221	mg/kg	0.315	--	0.105 U	0.0483 U	0.203 U	0.192 U
Aroclor-1232	mg/kg	0.1572	--	0.0524 U	0.0241 U	0.102 U	0.096 U
Aroclor-1242	mg/kg	0.1572	--	0.0524 U	0.0241 U	0.102 U	0.096 U
Aroclor-1248	mg/kg	0.1572	--	0.0524 U	0.0241 U	0.102 U	0.096 U
Aroclor-1254	mg/kg	0.1572	--	0.0524 U	0.0241 U	0.102 U	0.096 U
Aroclor-1260	mg/kg	0.1572	--	0.0524 U	0.0241 U	0.102 U	0.096 U
Pesticides							
4,4'-DDD	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
4,4'-DDE	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
4,4'-DDT	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
Aldrin	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.0102 U	0.0048 U
alpha-BHC	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
alpha-Chlordane	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
beta-BHC	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
delta-BHC	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
Dieldrin	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.0178 U	0.0168 U
Endosulfan I	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.0152 U	0.0192 U
Endosulfan II	mg/kg	0.00262	--	0.00262 U	0.00181 U	0.0254 U	0.0216 U
Endosulfan sulfate	mg/kg	0.00262	--	0.00262 U	0.00302 U	0.127 U	0.12 U
Endrin	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.0355 U	0.0528 U
Endrin aldehyde	mg/kg	0.00262	--	0.00262 U	0.00362 U	0.127 U	0.12 U
Endrin ketone	mg/kg	0.00262	--	0.00262 U	0.00181 U	0.127 U	0.12 U
gamma-BHC (Lindane)	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
gamma-Chlordane	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
Heptachlor	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.00508 U	0.0048 U
Heptachlor epoxide	mg/kg	0.00262	--	0.00262 U	0.00121 U	0.0279 U	0.0072 U
Methoxychlor	mg/kg	0.00393	--	0.00393 U	0.0103 U	0.127 U	0.134 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-03-51 08/16/2012	RD-01-03-51 08/15/2012	RD-02-03-51 08/15/2012	RD-02-03-52 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Duplicate
Toxaphene	mg/kg	0.0787	--	0.0787 U	0.0362 U	0.152 U	0.144 U
Semivolatiles							
2-Methylnaphthalene	mg/kg	0.00405	--	0.00135	0.0118 U	0.0949	0.224
Acenaphthene	mg/kg	0.00114	--	0.00038	0.0118 U	0.0909	0.0596
Acenaphthylene	mg/kg	0.0006	--	0.0002	0.0118 U	0.0516 U	0.0502 U
Anthracene	mg/kg	0.00132	--	0.00044	0.0118 U	0.155 U	0.1 U
Benzo(a)anthracene	mg/kg	0.00768	--	0.00256	0.0118 U	0.383	0.276
Benzo(a)pyrene	mg/kg	0.01023	--	0.00341	0.0118 U	0.201	0.117
Benzo(b and/or k) fluoranthene	mg/kg	0.02199	--	0.00733	0.0118 U	0.472	0.337
Benzo(g,h,i)perylene	mg/kg	0.01065	--	0.00355	0.0118 U	0.123	0.102
Chrysene	mg/kg	0.0315	--	0.0105	0.0384	1.75	1.41
Dibenzo(a,h)anthracene	mg/kg	0.0027	--	0.0009	0.0118 U	0.0516 U	0.0502 U
Fluoranthene	mg/kg	0.01224	--	0.00408	0.0118 U	0.0754	0.0502 U
Fluorene	mg/kg	0.00084	--	0.00028	0.0118 U	0.0516 U	0.0502 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.00462	--	0.00154	0.0118 U	0.0646	0.0518
Naphthalene	mg/kg	0.00588	--	0.00196	0.0118 U	0.0516 U	0.0502 U
Phenanthrene	mg/kg	0.00894	--	0.00298	0.0118 U	0.155 U	0.1 U
Pyrene	mg/kg	0.02415	--	0.00805	0.0134	0.966	0.664
Volatiles							
1,1,1-Trichloroethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,1,2,2-Tetrachloroethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,1,2-Trichloroethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,1-Dichloroethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,1-Dichloroethene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,2,4-Trichlorobenzene	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U
1,2-Dibromo-3-chloropropane	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-03-51 08/16/2012	RD-01-03-51 08/15/2012	RD-02-03-51 08/15/2012	RD-02-03-52 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Duplicate
1,2-Dibromoethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,2-Dichlorobenzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,2-Dichloroethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,2-Dichloropropane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,3-Dichlorobenzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
1,4-Dichlorobenzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
2-Butanone	mg/kg	0.349	--	0.349 U	0.0055 U	0.006 B	0.0054 B
2-Hexanone	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U
4-Methyl-2-pentanone	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U
Acetone	mg/kg	0.697	--	0.697 U	0.011 U	0.0169 B, J	0.0195 B, J
Benzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Bromodichloromethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Bromoform	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Bromomethane	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U
Carbon disulfide	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Carbon tetrachloride	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Chlorobenzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Chloroethane	mg/kg	0.418	--	0.418 U	0.0055 U	0.0046 U	0.0054 U
Chloroform	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Chloromethane	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U
cis-1,2-Dichloroethene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
cis-1,3-Dichloropropene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Cyclohexane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Dibromochloromethane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Dichlorodifluoromethane	mg/kg	0.349	--	0.349 U	0.0165 U	0.0139 U	0.0161 U
Ethylbenzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Isopropylbenzene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-03-51 08/16/2012	RD-01-03-51 08/15/2012	RD-02-03-51 08/15/2012	RD-02-03-52 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Duplicate
meta-/para-Xylene	mg/kg	0.279	--	0.279 U	0.011 U	0.0092 U	0.0108 U
Methyl acetate	mg/kg	0.349	--	0.349 U	0.0055 U	0.0046 U	0.0054 U
Methyl tert-butyl ether	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Methylcyclohexane	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Methylene chloride	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
ortho-Xylene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Styrene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Tetrachloroethene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Toluene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
trans-1,2-Dichloroethene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
trans-1,3-Dichloropropene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Trichloroethene	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U
Trichlorofluoromethane	mg/kg	0.697	--	0.697 U	0.0055 U	0.0046 U	0.0054 U
Vinyl chloride	mg/kg	0.139	--	0.139 U	0.0055 U	0.0046 U	0.0054 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-01-03-51 08/14/2012 Field Sample	DD-02-03-51 08/14/2012 Field Sample	DD-03-03-51 08/14/2012 Field Sample	DD-04-03-51 08/14/2012 Field Sample
Metals							
Aluminum	mg/kg	1602	--	2390	16500	7660	993
Antimony	mg/kg	0.6	--	1.1 U	1.1 U	1.5 U	0.6 U
Arsenic	mg/kg	0.6	--	1.1	4.5	2.8	0.6 U
Barium	mg/kg	48.3	--	116 K	127 K	92 K	42.5 K
Beryllium	mg/kg	0.6	--	1.1 U	1.1 U	1.5 U	0.6 U
Cadmium	mg/kg	4.8	--	1.1 U	1.1 U	1.5 U	0.6 U
Calcium	mg/kg	312	--	855	3090	2430	292
Chromium	mg/kg	1.2	--	3.4	13.6	7.3	1.7
Chromium, hexavalent	mg/kg	1.5	--	1.6 U			
Cobalt	mg/kg	2.4	--	5.6	6.5	8.5	2.4 U
Copper	mg/kg	2.4	--	7	17	20.6	2.9
Iron	mg/kg	2439	--	5040	17000	10200	1470
Lead	mg/kg	26.4	--	128	25.1	40	34.9
Magnesium	mg/kg	110.1	--	206	877	461	51.8
Manganese	mg/kg	7.5	--	80.9	90	121	14.9
Mercury	mg/kg	0.066	--	0.102 U	0.224	0.16	0.076
Nickel	mg/kg	2.4	--	4.2 U	12.3	10.1	2.4 U
Potassium	mg/kg	118	--	212 U	815	412	121 U
Selenium	mg/kg	0.6	--	1.1 U	1.1 U	1.5 U	0.6 U
Silver	mg/kg	1.2	--	2.1 U	2.3 U	3.1 U	1.2 U
Sodium	mg/kg	59	--	252	114 U	153 U	60.7 U
Thallium	mg/kg	0.6	--	1.1 U	1.1 U	1.5 U	0.6 U
Vanadium	mg/kg	8.1	--	8.6	33.9	19.3	3.8
Zinc	mg/kg	31.5	--	59	100	148	18.5
PCBs							
Aroclor-1016	mg/kg	0.1572	--	0.0602 U	0.0434 U	0.0687 U	0.0264 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-01-03-51 08/14/2012	DD-02-03-51 08/14/2012	DD-03-03-51 08/14/2012	DD-04-03-51 08/14/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
Aroclor-1221	mg/kg	0.315	--	0.12 U	0.0868 U	0.137 U	0.0528 U
Aroclor-1232	mg/kg	0.1572	--	0.0602 U	0.0434 U	0.0687 U	0.0264 U
Aroclor-1242	mg/kg	0.1572	--	0.0602 U	0.0434 U	0.0687 U	0.0264 U
Aroclor-1248	mg/kg	0.1572	--	0.0602 U	0.0434 U	0.0687 U	0.0264 U
Aroclor-1254	mg/kg	0.1572	--	0.0602 U	0.0434 U	0.0687 U	0.0264 U
Aroclor-1260	mg/kg	0.1572	--	0.0602 U	0.0434 U	0.0687 U	0.0264 U
Pesticides							
4,4'-DDD	mg/kg	0.00262	--	0.00544	0.00217 U	0.00344 U	0.00499
4,4'-DDE	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
4,4'-DDT	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
Aldrin	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.0172 U	0.00661 U
alpha-BHC	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
alpha-Chlordane	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
beta-BHC	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
delta-BHC	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
Dieldrin	mg/kg	0.00262	--	0.00602 U	0.00217 U	0.0172 U	0.00991 U
Endosulfan I	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.0172 U	0.00661 U
Endosulfan II	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.0172 U	0.00661 U
Endosulfan sulfate	mg/kg	0.00262	--	0.00301 U	0.00434 U	0.0172 U	0.00661 U
Endrin	mg/kg	0.00262	--	0.00301 U	0.00542 U	0.0172 U	0.00661 U
Endrin aldehyde	mg/kg	0.00262	--	0.00301 U	0.00651 U	0.0172 U	0.00661 U
Endrin ketone	mg/kg	0.00262	--	0.00301 U	0.00976 U	0.0172 U	0.00661 U
gamma-BHC (Lindane)	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
gamma-Chlordane	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.0016
Heptachlor	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.00344 U	0.00132 U
Heptachlor epoxide	mg/kg	0.00262	--	0.00301 U	0.00217 U	0.0172 U	0.00661 U
Methoxychlor	mg/kg	0.00393	--	0.00451 U	0.0228 U	0.0258 U	0.00991 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-01-03-51 08/14/2012	DD-02-03-51 08/14/2012	DD-03-03-51 08/14/2012	DD-04-03-51 08/14/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
Toxaphene	mg/kg	0.0787	--	0.0903 U	0.0651 U	0.103 U	0.0396 U
Semivolatiles							
2-Methylnaphthalene	mg/kg	0.00405	--	0.00325	0.014	0.0348 U	0.0135 U
Acenaphthene	mg/kg	0.00114	--	0.00061	0.0135 U	0.0348 U	0.0135 U
Acenaphthylene	mg/kg	0.0006	--	0.00048	0.0135 U	0.0348 U	0.0135 U
Anthracene	mg/kg	0.00132	--	0.00131	0.0135 U	0.0348 U	0.0135 U
Benzo(a)anthracene	mg/kg	0.00768	--	0.0116	0.0312	0.0363	0.0259
Benzo(a)pyrene	mg/kg	0.01023	--	0.0114	0.0357	0.0348 U	0.0352
Benzo(b and/or k) fluoranthene	mg/kg	0.02199	--	0.0193	0.0949	0.0639	0.0443
Benzo(g,h,i)perylene	mg/kg	0.01065	--	0.0146	0.0232	0.043	0.0456
Chrysene	mg/kg	0.0315	--	0.0414	0.259	0.155	0.101
Dibenzo(a,h)anthracene	mg/kg	0.0027	--	0.00367	0.0135 U	0.0348 U	0.0135 U
Fluoranthene	mg/kg	0.01224	--	0.00892	0.0215	0.0348 U	0.0386
Fluorene	mg/kg	0.00084	--	0.00095	0.0135 U	0.0348 U	0.0135 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.00462	--	0.00538	0.0141	0.0348 U	0.0153
Naphthalene	mg/kg	0.00588	--	0.00367	0.0135 U	0.0348 U	0.0135 U
Phenanthrene	mg/kg	0.00894	--	0.00872	0.0162	0.0348 U	0.039
Pyrene	mg/kg	0.02415	--	0.0297	0.0926	0.083	0.0625
Volatiles							
1,1,1-Trichloroethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,1,2,2-Tetrachloroethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,1,2-Trichloroethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,1-Dichloroethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,1-Dichloroethene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,2,4-Trichlorobenzene	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
1,2-Dibromo-3-chloropropane	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-01-03-51 08/14/2012	DD-02-03-51 08/14/2012	DD-03-03-51 08/14/2012	DD-04-03-51 08/14/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
1,2-Dibromoethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,2-Dichlorobenzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,2-Dichloroethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,2-Dichloropropane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,3-Dichlorobenzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
1,4-Dichlorobenzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
2-Butanone	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
2-Hexanone	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
4-Methyl-2-pentanone	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
Acetone	mg/kg	0.697	--	0.793 U	1.1 U	1.75 U	0.682 U
Benzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Bromodichloromethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Bromoform	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Bromomethane	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
Carbon disulfide	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Carbon tetrachloride	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Chlorobenzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Chloroethane	mg/kg	0.418	--	0.476 U	0.66 U	1.05 U	0.409 U
Chloroform	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Chloromethane	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
cis-1,2-Dichloroethene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
cis-1,3-Dichloropropene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Cyclohexane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Dibromochloromethane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Dichlorodifluoromethane	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
Ethylbenzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Isopropylbenzene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-01-03-51 08/14/2012	DD-02-03-51 08/14/2012	DD-03-03-51 08/14/2012	DD-04-03-51 08/14/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
meta-/para-Xylene	mg/kg	0.279	--	0.317 U	0.44 U	0.699 U	0.273 U
Methyl acetate	mg/kg	0.349	--	0.396 U	0.55 U	0.874 U	0.341 U
Methyl tert-butyl ether	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Methylcyclohexane	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Methylene chloride	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
ortho-Xylene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Styrene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Tetrachloroethene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Toluene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
trans-1,2-Dichloroethene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
trans-1,3-Dichloropropene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Trichloroethene	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U
Trichlorofluoromethane	mg/kg	0.697	--	0.951 U	1.32 U	2.1 U	0.818 U
Vinyl chloride	mg/kg	0.139	--	0.159 U	0.22 U	0.35 U	0.136 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-03-52 08/14/2012	DD-05-03-51 08/16/2012	DD-05-03-52 08/16/2012	OP-01-03-51 08/15/2012
			Sample Type	Field Duplicate	Field Sample	Field Duplicate	Field Sample
Metals							
Aluminum	mg/kg	1602	--	1650	7250	5690	3880
Antimony	mg/kg	0.6	--	0.6 U	0.8 U	0.6 U	0.6 U
Arsenic	mg/kg	0.6	--	0.7	2.1	1.5	1.9
Barium	mg/kg	48.3	--	47.6 K	101	70.1	57.2
Beryllium	mg/kg	0.6	--	0.6 U	0.8 U	0.6 U	0.6 U
Cadmium	mg/kg	4.8	--	0.6 U	0.8 U	0.6 U	0.6 U
Calcium	mg/kg	312	--	661	2890	2170	1000
Chromium	mg/kg	1.2	--	2.2	7.2	5.6	3.9
Chromium, hexavalent	mg/kg	1.5	--				
Cobalt	mg/kg	2.4	--	3.7	4.6	3	2.2 U
Copper	mg/kg	2.4	--	4.6	31.9	67.8	6.1
Iron	mg/kg	2439	--	2460	7460	6640	6220
Lead	mg/kg	26.4	--	33.2	21.5	20.4	8.1
Magnesium	mg/kg	110.1	--	118	553	456	245
Manganese	mg/kg	7.5	--	23.4	83.8	61.9	34.4
Mercury	mg/kg	0.066	--	0.076 U	0.17	0.078	0.089
Nickel	mg/kg	2.4	--	2.7	11.3	7	2.3
Potassium	mg/kg	118	--	120 U	382	327	162
Selenium	mg/kg	0.6	--	0.6 U	0.8 U	0.6 U	0.6 U
Silver	mg/kg	1.2	--	1.2 U	1.6 U	1.2 U	1.1 U
Sodium	mg/kg	59	--	59.9 U	80.3 U	62.4 U	56.2
Thallium	mg/kg	0.6	--	0.6 U	0.8 U	0.6 U	0.6 U
Vanadium	mg/kg	8.1	--	5.8	19.5	14.2	11.2
Zinc	mg/kg	31.5	--	48.6	201	84.2	15.2
PCBs							
Aroclor-1016	mg/kg	0.1572	--	0.0527 U	0.0691 U	0.057 U	0.0469 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-03-52 08/14/2012	DD-05-03-51 08/16/2012	DD-05-03-52 08/16/2012	OP-01-03-51 08/15/2012
			Sample Type	Field Duplicate	Field Sample	Field Duplicate	Field Sample
Aroclor-1221	mg/kg	0.315	--	0.105 U	0.138 U	0.114 U	0.0938 U
Aroclor-1232	mg/kg	0.1572	--	0.0527 U	0.0691 U	0.057 U	0.0469 U
Aroclor-1242	mg/kg	0.1572	--	0.0527 U	0.0691 U	0.057 U	0.0469 U
Aroclor-1248	mg/kg	0.1572	--	0.0527 U	0.0691 U	0.057 U	0.0469 U
Aroclor-1254	mg/kg	0.1572	--	0.0527 U	0.0691 U	0.057 U	0.0469 U
Aroclor-1260	mg/kg	0.1572	--	0.0527 U	0.0691 U	0.057 U	0.0469 U
Pesticides							
4,4'-DDD	mg/kg	0.00262	--	0.00445	0.00464 J	0.00448 J	0.00234 U
4,4'-DDE	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
4,4'-DDT	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.0092 J	0.00234 U
Aldrin	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
alpha-BHC	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
alpha-Chlordane	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
beta-BHC	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
delta-BHC	mg/kg	0.00262	--	0.00264 U	0.00043 U	0.00285 U	0.00234 U
Dieldrin	mg/kg	0.00262	--	0.00923 U	0.00345 U	0.00285 U	0.00234 U
Endosulfan I	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
Endosulfan II	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00469 U
Endosulfan sulfate	mg/kg	0.00262	--	0.00264 U	0.00518 U	0.00285 U	0.00586 U
Endrin	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
Endrin aldehyde	mg/kg	0.00262	--	0.00264 U	0.00864 U	0.00712 U	0.0105 U
Endrin ketone	mg/kg	0.00262	--	0.00264 U	0.00864 U	0.00712 U	0.00469 U
gamma-BHC (Lindane)	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
gamma-Chlordane	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
Heptachlor	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
Heptachlor epoxide	mg/kg	0.00262	--	0.00264 U	0.00345 U	0.00285 U	0.00234 U
Methoxychlor	mg/kg	0.00393	--	0.0119 U	0.0259 U	0.0214 U	0.0293 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-03-52 08/14/2012	DD-05-03-51 08/16/2012	DD-05-03-52 08/16/2012	OP-01-03-51 08/15/2012
			Sample Type	Field Duplicate	Field Sample	Field Duplicate	Field Sample
Toxaphene	mg/kg	0.0787	--	0.0791 U	0.026 U	0.0854 U	0.0703 U
Semivolatiles							
2-Methylnaphthalene	mg/kg	0.00405	--	0.0117	0.0209 U	0.0327	0.0141
Acenaphthene	mg/kg	0.00114	--	0.0056 U	0.0209 U	0.0089 U	0.0122 U
Acenaphthylene	mg/kg	0.0006	--	0.0056 U	0.0209 U	0.0089 U	0.0122 U
Anthracene	mg/kg	0.00132	--	0.0056 U	0.0209 U	0.0089 U	0.0122 U
Benzo(a)anthracene	mg/kg	0.00768	--	0.0198	0.0209 U	0.0089 U	0.0194
Benzo(a)pyrene	mg/kg	0.01023	--	0.0284	0.0209 U	0.0184	0.0261
Benzo(b and/or k) fluoranthene	mg/kg	0.02199	--	0.0253	0.0409	0.0323	0.0724
Benzo(g,h,i)perylene	mg/kg	0.01065	--	0.0343	0.0209 U	0.0158	0.0252
Chrysene	mg/kg	0.0315	--	0.109	0.118	0.165	0.122
Dibenzo(a,h)anthracene	mg/kg	0.0027	--	0.00633	0.0209 U	0.0089 U	0.0122 U
Fluoranthene	mg/kg	0.01224	--	0.0124	0.0209 U	0.0089 U	0.0151
Fluorene	mg/kg	0.00084	--	0.0056 U	0.0209 U	0.0089 U	0.0122 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.00462	--	0.0095	0.0209 U	0.0089 U	0.0148
Naphthalene	mg/kg	0.00588	--	0.00846	0.0209 U	0.0326	0.0122 U
Phenanthrene	mg/kg	0.00894	--	0.0143	0.0209 U	0.0336	0.0242
Pyrene	mg/kg	0.02415	--	0.036	0.0403	0.035	0.0365
Volatiles							
1,1,1-Trichloroethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,1,2,2-Tetrachloroethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,1,2-Trichloroethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,1-Dichloroethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,1-Dichloroethene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,2,4-Trichlorobenzene	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
1,2-Dibromo-3-chloropropane	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-03-52 08/14/2012	DD-05-03-51 08/16/2012	DD-05-03-52 08/16/2012	OP-01-03-51 08/15/2012
			Sample Type	Field Duplicate	Field Sample	Field Duplicate	Field Sample
1,2-Dibromoethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,2-Dichlorobenzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,2-Dichloroethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,2-Dichloropropane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,3-Dichlorobenzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
1,4-Dichlorobenzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
2-Butanone	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
2-Hexanone	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
4-Methyl-2-pentanone	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
Acetone	mg/kg	0.697	--	0.691 U	0.875 U	0.728 U	0.632 U
Benzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Bromodichloromethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Bromoform	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Bromomethane	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
Carbon disulfide	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Carbon tetrachloride	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Chlorobenzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Chloroethane	mg/kg	0.418	--	0.415 U	0.525 U	0.437 U	0.379 U
Chloroform	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Chloromethane	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
cis-1,2-Dichloroethene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
cis-1,3-Dichloropropene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Cyclohexane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Dibromochloromethane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Dichlorodifluoromethane	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
Ethylbenzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Isopropylbenzene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-03-52 08/14/2012	DD-05-03-51 08/16/2012	DD-05-03-52 08/16/2012	OP-01-03-51 08/15/2012
			Sample Type	Field Duplicate	Field Sample	Field Duplicate	Field Sample
meta-/para-Xylene	mg/kg	0.279	--	0.276 U	0.35 U	0.291 U	0.253 U
Methyl acetate	mg/kg	0.349	--	0.345 U	0.438 U	0.364 U	0.316 U
Methyl tert-butyl ether	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Methylcyclohexane	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Methylene chloride	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
ortho-Xylene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Styrene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Tetrachloroethene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Toluene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
trans-1,2-Dichloroethene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
trans-1,3-Dichloropropene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Trichloroethene	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U
Trichlorofluoromethane	mg/kg	0.697	--	0.829 U	0.875 U	0.728 U	0.759 U
Vinyl chloride	mg/kg	0.139	--	0.138 U	0.175 U	0.146 U	0.126 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-03-51 08/15/2012 Field Sample	PPE-01-03-51 08/14/2012 Field Sample	PPE-02-03-51 08/14/2012 Field Sample	PPE-03-03-51 08/15/2012 Field Sample
Metals							
Aluminum	mg/kg	1602	--	2680	3580	1800	3710
Antimony	mg/kg	0.6	--	0.6 U	0.5 U	0.6 U	0.6 U
Arsenic	mg/kg	0.6	--	1.3	0.8	0.9	1.6
Barium	mg/kg	48.3	--	111	187 K	82.3 K	74.9
Beryllium	mg/kg	0.6	--	0.6 U	0.5 U	0.6 U	0.6 U
Cadmium	mg/kg	4.8	--	0.6 U	0.5 U	0.6 U	0.6 U
Calcium	mg/kg	312	--	963	505	597	1030
Chromium	mg/kg	1.2	--	3	3.4	2.6	4.2
Chromium, hexavalent	mg/kg	1.5	--		2.3	1.3 U	1.3 U
Cobalt	mg/kg	2.4	--	2.3 U	4.1	2.5	2.2 U
Copper	mg/kg	2.4	--	3.4	2.1 U	2.4 U	3.4
Iron	mg/kg	2439	--	4570	5340	4330	6070
Lead	mg/kg	26.4	--	7.2	8.3	18.1	8.5
Magnesium	mg/kg	110.1	--	218	248	149	235
Manganese	mg/kg	7.5	--	24.1	122	48.7	36.2
Mercury	mg/kg	0.066	--	0.078	0.057 U	0.054 U	0.087
Nickel	mg/kg	2.4	--	2.3 U	2.1 U	2.4 U	2.4
Potassium	mg/kg	118	--	161	115	120 U	182
Selenium	mg/kg	0.6	--	0.6 U	0.5 U	0.6 U	0.6 U
Silver	mg/kg	1.2	--	1.2 U	1.1 U	1.2 U	1.1 U
Sodium	mg/kg	59	--	219	402	131	55.8 U
Thallium	mg/kg	0.6	--	0.6 U	0.5 U	0.6 U	0.6 U
Vanadium	mg/kg	8.1	--	8.6	12	10.4	11
Zinc	mg/kg	31.5	--	42.4	3.4	14.8	19.6
PCBs							
Aroclor-1016	mg/kg	0.1572	--	0.122 U	0.0258 U	0.0578 U	0.123 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-03-51 08/15/2012	PPE-01-03-51 08/14/2012	PPE-02-03-51 08/14/2012	PPE-03-03-51 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
Aroclor-1221	mg/kg	0.315	--	0.245 U	0.0516 U	0.116 U	0.245 U
Aroclor-1232	mg/kg	0.1572	--	0.122 U	0.0258 U	0.0578 U	0.123 U
Aroclor-1242	mg/kg	0.1572	--	0.122 U	0.0258 U	0.0578 U	0.123 U
Aroclor-1248	mg/kg	0.1572	--	0.122 U	0.0258 U	0.0578 U	0.123 U
Aroclor-1254	mg/kg	0.1572	--	0.122 U	0.0258 U	0.0578 U	0.123 U
Aroclor-1260	mg/kg	0.1572	--	0.122 U	0.0258 U	0.0578 U	0.123 U
Pesticides							
4,4'-DDD	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00337	0.00614 U
4,4'-DDE	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
4,4'-DDT	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
Aldrin	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
alpha-BHC	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
alpha-Chlordane	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
beta-BHC	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
delta-BHC	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
Dieldrin	mg/kg	0.00262	--	0.00917 U	0.00129 U	0.00578 U	0.00614 U
Endosulfan I	mg/kg	0.00262	--	0.00917 U	0.00129 U	0.00289 U	0.00614 U
Endosulfan II	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
Endosulfan sulfate	mg/kg	0.00262	--	0.0397 U	0.00129 U	0.00289 U	0.00921 U
Endrin	mg/kg	0.00262	--	0.0214 U	0.00129 U	0.00289 U	0.00614 U
Endrin aldehyde	mg/kg	0.00262	--	0.0367 U	0.00129 U	0.00289 U	0.0123 U
Endrin ketone	mg/kg	0.00262	--	0.0459 U	0.00129 U	0.00434 U	0.00921 U
gamma-BHC (Lindane)	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
gamma-Chlordane	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
Heptachlor	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
Heptachlor epoxide	mg/kg	0.00262	--	0.00611 U	0.00129 U	0.00289 U	0.00614 U
Methoxychlor	mg/kg	0.00393	--	0.128 U	0.00129 U	0.0145 U	0.0368 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-03-51 08/15/2012 Field Sample	PPE-01-03-51 08/14/2012 Field Sample	PPE-02-03-51 08/14/2012 Field Sample	PPE-03-03-51 08/15/2012 Field Sample
Toxaphene	mg/kg	0.0787	--	0.183 U	0.0387 U	0.0868 U	0.184 U
Semivolatiles							
2-Methylnaphthalene	mg/kg	0.00405	--	0.027 U		0.0319	0.00828
Acenaphthene	mg/kg	0.00114	--	0.027 U		0.0244 U	0.0075 U
Acenaphthylene	mg/kg	0.0006	--	0.027 U		0.0244 U	0.0075 U
Anthracene	mg/kg	0.00132	--	0.0711		0.0249	0.0075 U
Benzo(a)anthracene	mg/kg	0.00768	--	0.412		0.0975	0.0229
Benzo(a)pyrene	mg/kg	0.01023	--	0.135		0.044	0.022
Benzo(b and/or k) fluoranthene	mg/kg	0.02199	--	0.261		0.0549	0.0575
Benzo(g,h,i)perylene	mg/kg	0.01065	--	0.0751		0.0417	0.0141
Chrysene	mg/kg	0.0315	--	1.6		0.228	0.148
Dibenzo(a,h)anthracene	mg/kg	0.0027	--	0.0281		0.0244 U	0.0075 U
Fluoranthene	mg/kg	0.01224	--	0.289		0.0381	0.016
Fluorene	mg/kg	0.00084	--	0.027 U		0.0244 U	0.0075 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.00462	--	0.0315		0.0244 U	0.00991
Naphthalene	mg/kg	0.00588	--	0.027 U		0.0267	0.0075 U
Phenanthrene	mg/kg	0.00894	--	0.0376		0.0402	0.0214
Pyrene	mg/kg	0.02415	--	2.02		0.225	0.0914
Volatiles							
1,1,1-Trichloroethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,1,2,2-Tetrachloroethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,1,2-Trichloroethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,1-Dichloroethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,1-Dichloroethene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,2,4-Trichlorobenzene	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
1,2-Dibromo-3-chloropropane	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-03-51 08/15/2012	PPE-01-03-51 08/14/2012	PPE-02-03-51 08/14/2012	PPE-03-03-51 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
1,2-Dibromoethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,2-Dichlorobenzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,2-Dichloroethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,2-Dichloropropane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,3-Dichlorobenzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
1,4-Dichlorobenzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
2-Butanone	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
2-Hexanone	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
4-Methyl-2-pentanone	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
Acetone	mg/kg	0.697	--	0.61 U	0.668 U	0.669 U	0.622 U
Benzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Bromodichloromethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Bromoform	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Bromomethane	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
Carbon disulfide	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Carbon tetrachloride	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Chlorobenzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Chloroethane	mg/kg	0.418	--	0.366 U	0.401 U	0.402 U	0.373 U
Chloroform	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Chloromethane	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
cis-1,2-Dichloroethene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
cis-1,3-Dichloropropene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Cyclohexane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Dibromochloromethane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Dichlorodifluoromethane	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
Ethylbenzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Isopropylbenzene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-03-51 08/15/2012	PPE-01-03-51 08/14/2012	PPE-02-03-51 08/14/2012	PPE-03-03-51 08/15/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
meta-/para-Xylene	mg/kg	0.279	--	0.244 U	0.267 U	0.268 U	0.249 U
Methyl acetate	mg/kg	0.349	--	0.305 U	0.334 U	0.335 U	0.311 U
Methyl tert-butyl ether	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Methylcyclohexane	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Methylene chloride	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
ortho-Xylene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Styrene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Tetrachloroethene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Toluene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
trans-1,2-Dichloroethene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
trans-1,3-Dichloropropene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Trichloroethene	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U
Trichlorofluoromethane	mg/kg	0.697	--	0.732 U	0.801 U	0.803 U	0.747 U
Vinyl chloride	mg/kg	0.139	--	0.122 U	0.134 U	0.134 U	0.124 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-01-03-51 08/14/2012	SED-02-03-51 08/14/2012	SED-03-03-51 08/14/2012	SED-04-03-51 08/16/2012
		Sample Type		Field Sample	Field Sample	Field Sample	Field Sample
Metals							
Aluminum	mg/kg	1602	--	3140	2870	1700	2610
Antimony	mg/kg	0.6	--	0.6 U	0.7 U	0.7 U	0.6 U
Arsenic	mg/kg	0.6	--	0.6 U	0.8	0.7	1.1
Barium	mg/kg	48.3	--	53.7 K	57.8 K	69.7 K	229
Beryllium	mg/kg	0.6	--	0.6 U	0.7 U	0.7 U	0.6 U
Cadmium	mg/kg	4.8	--	0.6 U	0.7 U	0.7 U	0.6 U
Calcium	mg/kg	312	--	875	588	1000	724
Chromium	mg/kg	1.2	--	3.1	3.2	2.3	2.5
Chromium, hexavalent	mg/kg	1.5	--				
Cobalt	mg/kg	2.4	--	2.5	6	3.3	2.4 U
Copper	mg/kg	2.4	--	2.4 U	4.8	3.6	2.4 U
Iron	mg/kg	2439	--	2560	2960	3640	5430
Lead	mg/kg	26.4	--	6.4	24	37.8	9.7
Magnesium	mg/kg	110.1	--	329	202	144	256
Manganese	mg/kg	7.5	--	55.1	23.3	24.4	32.3
Mercury	mg/kg	0.066	--	0.063 U	0.132	0.083	0.056 U
Nickel	mg/kg	2.4	--	2.4 U	3.8	2.7 U	2.4 U
Potassium	mg/kg	118	--	139	179	133 U	118 U
Selenium	mg/kg	0.6	--	0.6 U	0.7 U	0.7 U	0.6 U
Silver	mg/kg	1.2	--	1.2 U	1.3 U	1.3 U	1.2 U
Sodium	mg/kg	59	--	369	178	142	266
Thallium	mg/kg	0.6	--	0.6 U	0.7 U	0.7 U	0.6 U
Vanadium	mg/kg	8.1	--	6.2	8.8	6.8	11.8
Zinc	mg/kg	31.5	--	3.7	42.8	42.8	7.8
PCBs							
Aroclor-1016	mg/kg	0.1572	--	0.0252 U	0.0595 U	0.0496 U	0.0512 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-01-03-51 08/14/2012	SED-02-03-51 08/14/2012	SED-03-03-51 08/14/2012	SED-04-03-51 08/16/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
Aroclor-1221	mg/kg	0.315	--	0.0503 U	0.119 U	0.0993 U	0.102 U
Aroclor-1232	mg/kg	0.1572	--	0.0252 U	0.0595 U	0.0496 U	0.0512 U
Aroclor-1242	mg/kg	0.1572	--	0.0252 U	0.0595 U	0.0496 U	0.0512 U
Aroclor-1248	mg/kg	0.1572	--	0.0252 U	0.0595 U	0.0496 U	0.0512 U
Aroclor-1254	mg/kg	0.1572	--	0.0252 U	0.0595 U	0.0496 U	0.0512 U
Aroclor-1260	mg/kg	0.1572	--	0.0252 U	0.0595 U	0.0496 U	0.00656 U
Pesticides							
4,4'-DDD	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00915 J	0.00256 U
4,4'-DDE	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
4,4'-DDT	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
Aldrin	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
alpha-BHC	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
alpha-Chlordane	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
beta-BHC	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
delta-BHC	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
Dieldrin	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00384 U
Endosulfan I	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
Endosulfan II	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
Endosulfan sulfate	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
Endrin	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
Endrin aldehyde	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
Endrin ketone	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
gamma-BHC (Lindane)	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
gamma-Chlordane	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
Heptachlor	mg/kg	0.00262	--	0.00126 U	0.00298 U	0.00248 U	0.00256 U
Heptachlor epoxide	mg/kg	0.00262	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U
Methoxychlor	mg/kg	0.00393	--	0.00126 U	0.0298 U	0.0124 U	0.00256 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-01-03-51 08/14/2012	SED-02-03-51 08/14/2012	SED-03-03-51 08/14/2012	SED-04-03-51 08/16/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
Toxaphene	mg/kg	0.0787	--	0.0378 U	0.0893 U	0.0744 U	0.0768 U
Semivolatiles							
2-Methylnaphthalene	mg/kg	0.00405	--		0.215	0.0528	0.0053 U
Acenaphthene	mg/kg	0.00114	--		0.706	0.0157 U	0.0053 U
Acenaphthylene	mg/kg	0.0006	--		0.386	0.0157 U	0.0053 U
Anthracene	mg/kg	0.00132	--		0.53	0.0264	0.0053 U
Benzo(a)anthracene	mg/kg	0.00768	--		1.01	0.11	0.0053 U
Benzo(a)pyrene	mg/kg	0.01023	--		0.433	0.0901	0.0053 U
Benzo(b and/or k) fluoranthene	mg/kg	0.02199	--		0.422	0.147	0.0053 U
Benzo(g,h,i)perylene	mg/kg	0.01065	--		0.368	0.104	0.0053 U
Chrysene	mg/kg	0.0315	--		1.8	0.476	0.0121
Dibenzo(a,h)anthracene	mg/kg	0.0027	--		0.16	0.0258	0.0053 U
Fluoranthene	mg/kg	0.01224	--		0.567	0.0231	0.0053 U
Fluorene	mg/kg	0.00084	--		1.54	0.0157 U	0.0053 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.00462	--		0.134	0.0325	0.0053 U
Naphthalene	mg/kg	0.00588	--		0.134 U	0.0564	0.0053 U
Phenanthrene	mg/kg	0.00894	--		1.53	0.0489	0.0053 U
Pyrene	mg/kg	0.02415	--		2.02	0.283	0.00845
Volatiles							
1,1,1-Trichloroethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,1,2,2-Tetrachloroethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,1,2-Trichloroethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,1-Dichloroethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,1-Dichloroethene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,2,4-Trichlorobenzene	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
1,2-Dibromo-3-chloropropane	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-01-03-51 08/14/2012	SED-02-03-51 08/14/2012	SED-03-03-51 08/14/2012	SED-04-03-51 08/16/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
1,2-Dibromoethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,2-Dichlorobenzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,2-Dichloroethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,2-Dichloropropane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,3-Dichlorobenzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
1,4-Dichlorobenzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
2-Butanone	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
2-Hexanone	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
4-Methyl-2-pentanone	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
Acetone	mg/kg	0.697	--	0.646 U	0.789 U	0.657 U	0.658 U
Benzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Bromodichloromethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Bromoform	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Bromomethane	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
Carbon disulfide	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Carbon tetrachloride	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Chlorobenzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Chloroethane	mg/kg	0.418	--	0.387 U	0.474 U	0.394 U	0.395 U
Chloroform	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Chloromethane	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
cis-1,2-Dichloroethene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
cis-1,3-Dichloropropene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Cyclohexane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Dibromochloromethane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Dichlorodifluoromethane	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
Ethylbenzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Isopropylbenzene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-01-03-51 08/14/2012	SED-02-03-51 08/14/2012	SED-03-03-51 08/14/2012	SED-04-03-51 08/16/2012
			Sample Type	Field Sample	Field Sample	Field Sample	Field Sample
meta-/para-Xylene	mg/kg	0.279	--	0.258 U	0.316 U	0.263 U	0.263 U
Methyl acetate	mg/kg	0.349	--	0.323 U	0.395 U	0.328 U	0.329 U
Methyl tert-butyl ether	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Methylcyclohexane	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Methylene chloride	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
ortho-Xylene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Styrene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Tetrachloroethene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Toluene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
trans-1,2-Dichloroethene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
trans-1,3-Dichloropropene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Trichloroethene	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U
Trichlorofluoromethane	mg/kg	0.697	--	0.775 U	0.947 U	0.788 U	0.658 U
Vinyl chloride	mg/kg	0.139	--	0.129 U	0.158 U	0.131 U	0.132 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-05-03-51 08/16/2012 Field Sample
Metals				
Aluminum	mg/kg	1602	--	693
Antimony	mg/kg	0.6	--	0.6 U
Arsenic	mg/kg	0.6	--	0.6 U
Barium	mg/kg	48.3	--	33.2
Beryllium	mg/kg	0.6	--	0.6 U
Cadmium	mg/kg	4.8	--	0.6 U
Calcium	mg/kg	312	--	377
Chromium	mg/kg	1.2	--	1.2 U
Chromium, hexavalent	mg/kg	1.5	--	
Cobalt	mg/kg	2.4	--	2.4 U
Copper	mg/kg	2.4	--	2.4 U
Iron	mg/kg	2439	--	1380
Lead	mg/kg	26.4	--	16.3
Magnesium	mg/kg	110.1	--	63
Manganese	mg/kg	7.5	--	12.6
Mercury	mg/kg	0.066	--	0.063 U
Nickel	mg/kg	2.4	--	2.4 U
Potassium	mg/kg	118	--	121 U
Selenium	mg/kg	0.6	--	0.6 U
Silver	mg/kg	1.2	--	1.2 U
Sodium	mg/kg	59	--	86.4
Thallium	mg/kg	0.6	--	0.6 U
Vanadium	mg/kg	8.1	--	3.3
Zinc	mg/kg	31.5	--	17.2
PCBs				
Aroclor-1016	mg/kg	0.1572	--	0.122 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-05-03-51 08/16/2012 Field Sample
Aroclor-1221	mg/kg	0.315	--	0.244 U
Aroclor-1232	mg/kg	0.1572	--	0.122 U
Aroclor-1242	mg/kg	0.1572	--	0.0174 J
Aroclor-1248	mg/kg	0.1572	--	0.122 U
Aroclor-1254	mg/kg	0.1572	--	0.122 U
Aroclor-1260	mg/kg	0.1572	--	0.122 U
Pesticides				
4,4'-DDD	mg/kg	0.00262	--	0.00611 U
4,4'-DDE	mg/kg	0.00262	--	0.00611 U
4,4'-DDT	mg/kg	0.00262	--	0.00611 U
Aldrin	mg/kg	0.00262	--	0.00611 U
alpha-BHC	mg/kg	0.00262	--	0.00611 U
alpha-Chlordane	mg/kg	0.00262	--	0.00611 U
beta-BHC	mg/kg	0.00262	--	0.00611 U
delta-BHC	mg/kg	0.00262	--	0.00611 U
Dieldrin	mg/kg	0.00262	--	0.00611 U
Endosulfan I	mg/kg	0.00262	--	0.00611 U
Endosulfan II	mg/kg	0.00262	--	0.00611 U
Endosulfan sulfate	mg/kg	0.00262	--	0.00611 U
Endrin	mg/kg	0.00262	--	0.00611 U
Endrin aldehyde	mg/kg	0.00262	--	0.00611 U
Endrin ketone	mg/kg	0.00262	--	0.00611 U
gamma-BHC (Lindane)	mg/kg	0.00262	--	0.00611 U
gamma-Chlordane	mg/kg	0.00262	--	0.00611 U
Heptachlor	mg/kg	0.00262	--	0.00611 U
Heptachlor epoxide	mg/kg	0.00262	--	0.00611 U
Methoxychlor	mg/kg	0.00393	--	0.00611 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-05-03-51 08/16/2012 Field Sample
Toxaphene	mg/kg	0.0787	--	0.183 U
Semivolatiles				
2-Methylnaphthalene	mg/kg	0.00405	--	0.0128
Acenaphthene	mg/kg	0.00114	--	0.0055 U
Acenaphthylene	mg/kg	0.0006	--	0.0055 U
Anthracene	mg/kg	0.00132	--	0.00605
Benzo(a)anthracene	mg/kg	0.00768	--	0.0286
Benzo(a)pyrene	mg/kg	0.01023	--	0.0254
Benzo(b and/or k) fluoranthene	mg/kg	0.02199	--	0.0329
Benzo(g,h,i)perylene	mg/kg	0.01065	--	0.0145
Chrysene	mg/kg	0.0315	--	0.0905
Dibenzo(a,h)anthracene	mg/kg	0.0027	--	0.0055 U
Fluoranthene	mg/kg	0.01224	--	0.00853
Fluorene	mg/kg	0.00084	--	0.0055 U
Indeno(1,2,3-cd)pyrene	mg/kg	0.00462	--	0.0055 U
Naphthalene	mg/kg	0.00588	--	0.0153
Phenanthrene	mg/kg	0.00894	--	0.0118
Pyrene	mg/kg	0.02415	--	0.0761
Volatiles				
1,1,1-Trichloroethane	mg/kg	0.139	--	0.135 U
1,1,2,2-Tetrachloroethane	mg/kg	0.139	--	0.135 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	0.139	--	0.135 U
1,1,2-Trichloroethane	mg/kg	0.139	--	0.135 U
1,1-Dichloroethane	mg/kg	0.139	--	0.135 U
1,1-Dichloroethene	mg/kg	0.139	--	0.135 U
1,2,4-Trichlorobenzene	mg/kg	0.349	--	0.337 U
1,2-Dibromo-3-chloropropane	mg/kg	0.349	--	0.337 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-05-03-51 08/16/2012 Field Sample
1,2-Dibromoethane	mg/kg	0.139	--	0.135 U
1,2-Dichlorobenzene	mg/kg	0.139	--	0.135 U
1,2-Dichloroethane	mg/kg	0.139	--	0.135 U
1,2-Dichloropropane	mg/kg	0.139	--	0.135 U
1,3-Dichlorobenzene	mg/kg	0.139	--	0.135 U
1,4-Dichlorobenzene	mg/kg	0.139	--	0.135 U
2-Butanone	mg/kg	0.349	--	0.337 U
2-Hexanone	mg/kg	0.349	--	0.337 U
4-Methyl-2-pentanone	mg/kg	0.349	--	0.337 U
Acetone	mg/kg	0.697	--	0.673 U
Benzene	mg/kg	0.139	--	0.135 U
Bromodichloromethane	mg/kg	0.139	--	0.135 U
Bromoform	mg/kg	0.139	--	0.135 U
Bromomethane	mg/kg	0.349	--	0.337 U
Carbon disulfide	mg/kg	0.139	--	0.135 U
Carbon tetrachloride	mg/kg	0.139	--	0.135 U
Chlorobenzene	mg/kg	0.139	--	0.135 U
Chloroethane	mg/kg	0.418	--	0.404 U
Chloroform	mg/kg	0.139	--	0.135 U
Chloromethane	mg/kg	0.349	--	0.337 U
cis-1,2-Dichloroethene	mg/kg	0.139	--	0.135 U
cis-1,3-Dichloropropene	mg/kg	0.139	--	0.135 U
Cyclohexane	mg/kg	0.139	--	0.135 U
Dibromochloromethane	mg/kg	0.139	--	0.135 U
Dichlorodifluoromethane	mg/kg	0.349	--	0.337 U
Ethylbenzene	mg/kg	0.139	--	0.135 U
Isopropylbenzene	mg/kg	0.139	--	0.135 U

Table 2
Sediment Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SED-05-03-51 08/16/2012
			Sample Type	Field Sample
meta-/para-Xylene	mg/kg	0.279	--	0.269 U
Methyl acetate	mg/kg	0.349	--	0.337 U
Methyl tert-butyl ether	mg/kg	0.139	--	0.135 U
Methylcyclohexane	mg/kg	0.139	--	0.135 U
Methylene chloride	mg/kg	0.139	--	0.135 U
ortho-Xylene	mg/kg	0.139	--	0.135 U
Styrene	mg/kg	0.139	--	0.135 U
Tetrachloroethene	mg/kg	0.139	--	0.135 U
Toluene	mg/kg	0.139	--	0.135 U
trans-1,2-Dichloroethene	mg/kg	0.139	--	0.135 U
trans-1,3-Dichloropropene	mg/kg	0.139	--	0.135 U
Trichloroethene	mg/kg	0.139	--	0.135 U
Trichlorofluoromethane	mg/kg	0.697	--	0.673 U
Vinyl chloride	mg/kg	0.139	--	0.135 U

Table 3
Soil Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	PS-01-03-51 08/15/2012 Field Sample	PS-02-03-51 08/15/2012 Field Sample	PS-03-03-51 08/15/2012 Field Sample	TS-01-03-51 08/15/2012 Field Sample	TS-02-03-51 08/15/2012 Field Sample	WA-01-03-51 08/15/2012 Field Sample
Metals								
Aluminum	mg/kg	--	3860	1680	2140	1560	4420	2500
Antimony	mg/kg	--	0.5 U					
Arsenic	mg/kg	--	1.8	1.2	1.3	1.3	1.8	1.3
Barium	mg/kg	--	66.7	55.9	37.6	27.1	58.2	57.8
Beryllium	mg/kg	--	0.5 U					
Cadmium	mg/kg	--	0.5 U					
Calcium	mg/kg	--	1120	794	655	636	153	966
Chromium	mg/kg	--	8.6	3.5	3.1	1.3	4.5	3.9
Chromium, hexavalent	mg/kg	--	1.1 U	2.9				
Cobalt	mg/kg	--	2.8	2 U	2.1 U	2.1 U	1.9 U	2.1 U
Copper	mg/kg	--	13.9	7.1	7	4.8	5.3	2.5
Iron	mg/kg	--	7630	4640	5590	3200	5650	4450
Lead	mg/kg	--	26	19.5	13.1	10	9.3	6.2
Magnesium	mg/kg	--	264	169	231	130	145	219
Manganese	mg/kg	--	113	89.8 J	86.4	25.4 J	12.9	47.9
Mercury	mg/kg	--	0.223	0.114	0.132	0.062 U	0.1	0.063 U
Nickel	mg/kg	--	7.3	3.6	3.3	2.1 U	1.9 U	2.1 U
Potassium	mg/kg	--	272	131	172	218	416	180
Selenium	mg/kg	--	0.5 U					
Silver	mg/kg	--	1.1 U	1 U	1 U	1 U	1 U	1 U
Sodium	mg/kg	--	54.9 U	50.9 U	52.3 U	51.9 U	99.1	52 U
Thallium	mg/kg	--	0.5 U					
Vanadium	mg/kg	--	11.9	6.5	7.7	3	11.1	8
Zinc	mg/kg	--	49.1	27.3	30.4	13.7	8.3	16.4
PCBs								

Table 3
Soil Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	PS-01-03-51 08/15/2012 Field Sample	PS-02-03-51 08/15/2012 Field Sample	PS-03-03-51 08/15/2012 Field Sample	TS-01-03-51 08/15/2012 Field Sample	TS-02-03-51 08/15/2012 Field Sample	WA-01-03-51 08/15/2012 Field Sample
Aroclor-1016	mg/kg	--	0.101 U	0.102 U	0.0937 U	0.102 U	0.0961 U	0.042 U
Aroclor-1221	mg/kg	--	0.202 U	0.203 U	0.187 U	0.204 U	0.192 U	0.0841 U
Aroclor-1232	mg/kg	--	0.101 U	0.102 U	0.0937 U	0.102 U	0.0961 U	0.042 U
Aroclor-1242	mg/kg	--	0.101 U	0.102 U	0.0937 U	0.102 U	0.0961 U	0.042 U
Aroclor-1248	mg/kg	--	0.101 U	0.102 U	0.0937 U	0.102 U	0.0961 U	0.042 U
Aroclor-1254	mg/kg	--	0.101 U	0.102 U	0.0937 U	0.102 U	0.0961 U	0.042 U
Aroclor-1260	mg/kg	--	0.101 U	0.102 U	0.0937 U	0.102 U	0.0961 U	0.042 U
Pesticides								
4,4'-DDD	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
4,4'-DDE	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
4,4'-DDT	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
Aldrin	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
alpha-BHC	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
alpha-Chlordane	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
beta-BHC	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
delta-BHC	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
Dieldrin	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.0127 U	0.0048 U	0.0021 U
Endosulfan I	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00764 U	0.0048 U	0.0021 U
Endosulfan II	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.0356 U	0.108 U	0.0021 U
Endosulfan sulfate	mg/kg	--	0.00759 U	0.00508 U	0.00703 U	0.127 U	0.0048 U	0.0021 U
Endrin	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.0305 U	0.0048 U	0.0021 U
Endrin aldehyde	mg/kg	--	0.0101 U	0.00508 U	0.0141 U	0.127 U	0.00961 U	0.0021 U
Endrin ketone	mg/kg	--	0.00759 U	0.00762 U	0.00937 U	0.127 U	0.00721 U	0.00315 U
gamma-BHC (Lindane)	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
gamma-Chlordane	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U
Heptachlor	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00509 U	0.0048 U	0.0021 U

Table 3
Soil Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	PS-01-03-51 08/15/2012 Field Sample	PS-02-03-51 08/15/2012 Field Sample	PS-03-03-51 08/15/2012 Field Sample	TS-01-03-51 08/15/2012 Field Sample	TS-02-03-51 08/15/2012 Field Sample	WA-01-03-51 08/15/2012 Field Sample
Heptachlor epoxide	mg/kg	--	0.00506 U	0.00508 U	0.00469 U	0.00764 U	0.0048 U	0.0021 U
Methoxychlor	mg/kg	--	0.0304 U	0.0127 U	0.0328 U	0.186 U	0.0168 U	0.0063 U
Toxaphene	mg/kg	--	0.152 U	0.152 U	0.141 U	0.153 U	0.144 U	0.063 U
Semivolatiles								
2-Methylnaphthalene	mg/kg	--	0.159	0.122	0.148	0.0129 U	0.0163	0.005
Acenaphthene	mg/kg	--	0.0056 U	0.0044 U	0.0044 U	0.0129 U	0.0131 U	0.00035
Acenaphthylene	mg/kg	--	0.0056 U	0.0107	0.0044 U	0.0129 U	0.0131 U	0.00054
Anthracene	mg/kg	--	0.0183	0.0188	0.0117	0.0129 U	0.0131 U	0.00073
Benzo(a)anthracene	mg/kg	--	0.0872	0.0372	0.0236	0.0205	0.0791	0.00419
Benzo(a)pyrene	mg/kg	--	0.0617	0.0328	0.0238	0.0251	0.073	0.00405
Benzo(b and/or k) fluoranthene	mg/kg	--	0.163	0.0721	0.0591	0.245	0.298	0.00951
Benzo(g,h,i)perylene	mg/kg	--	0.04	0.0373	0.0249	0.0703	0.0957	0.00464
Chrysene	mg/kg	--	0.285	0.117	0.0927	1.34	1.38	0.0181
Dibenzo(a,h)anthracene	mg/kg	--	0.011	0.00674	0.00476	0.0187	0.0269	0.00119
Fluoranthene	mg/kg	--	0.0832	0.0378	0.0267	0.0129 U	0.0131 U	0.00285
Fluorene	mg/kg	--	0.0056 U	0.0044 U	0.0044 U	0.0129 U	0.0131 U	0.00045
Indeno(1,2,3-cd)pyrene	mg/kg	--	0.0224	0.0157	0.0105	0.0196	0.0332	0.00292
Naphthalene	mg/kg	--	0.0927	0.0661	0.0777	0.0129 U	0.0141	0.00293
Phenanthrene	mg/kg	--	0.148	0.116	0.0815	0.0216	0.0304	0.00359
Pyrene	mg/kg	--	0.149	0.0817	0.0572	0.205	0.2	0.00696
Volatiles								
1,1,1-Trichloroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,1,2,2-Tetrachloroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,1,2-Trichloroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,1-Dichloroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U

Table 3
Soil Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	PS-01-03-51 08/15/2012 Field Sample	PS-02-03-51 08/15/2012 Field Sample	PS-03-03-51 08/15/2012 Field Sample	TS-01-03-51 08/15/2012 Field Sample	TS-02-03-51 08/15/2012 Field Sample	WA-01-03-51 08/15/2012 Field Sample
1,1-Dichloroethene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,2,4-Trichlorobenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,2-Dibromo-3-chloropropane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,2-Dibromoethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,2-Dichlorobenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,2-Dichloroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,2-Dichloropropane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,3-Dichlorobenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
1,4-Dichlorobenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
2-Butanone	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
2-Hexanone	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
4-Methyl-2-pentanone	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Acetone	mg/kg	--	0.0145 U	0.0349 U	0.0105 U	0.0134 U	0.0212 J, RL	0.0637 U
Benzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Bromodichloromethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Bromoform	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Bromomethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Carbon disulfide	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Carbon tetrachloride	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Chlorobenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Chloroethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Chloroform	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Chloromethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
cis-1,2-Dichloroethene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
cis-1,3-Dichloropropene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Cyclohexane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U

Table 3
Soil Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	PS-01-03-51 08/15/2012 Field Sample	PS-02-03-51 08/15/2012 Field Sample	PS-03-03-51 08/15/2012 Field Sample	TS-01-03-51 08/15/2012 Field Sample	TS-02-03-51 08/15/2012 Field Sample	WA-01-03-51 08/15/2012 Field Sample
Dibromochloromethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Dichlorodifluoromethane	mg/kg	--	0.0217 U	0.0523 U	0.0158 U	0.0202 U	0.0537 U	0.0955 U
Ethylbenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Isopropylbenzene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
meta-/para-Xylene	mg/kg	--	0.0145 U	0.0349 U	0.0105 U	0.0134 U	0.0358 U	0.0637 U
Methyl acetate	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Methyl tert-butyl ether	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Methylcyclohexane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Methylene chloride	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
ortho-Xylene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Styrene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Tetrachloroethene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Toluene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
trans-1,2-Dichloroethene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
trans-1,3-Dichloropropene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Trichloroethene	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Trichlorofluoromethane	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U
Vinyl chloride	mg/kg	--	0.0072 U	0.0174 U	0.0053 U	0.0067 U	0.0179 U	0.0318 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-00-11-120816 08/16/2012 Field Sample	BG-01-03-44 08/16/2012 Trip Blank	DD-01-00-11-120814 08/14/2012 Field Sample
Metals						
Aluminum	ug/L	1302	--	434		402
Antimony	ug/L	2	--	2 U		2 U
Arsenic	ug/L	2	--	2 U		2.5
Barium	ug/L	103.5	--	34.5		43.7
Beryllium	ug/L	5	--	5 U		5 U
Cadmium	ug/L	5	--	5 U		5 U
Calcium	ug/L	5310	--	1770		2780
Chromium	ug/L	10	--	10 U		10 U
Chromium, hexavalent	ug/L	10	--	10 U		10 UH
Cobalt	ug/L	20	--	20 U		20 U
Copper	ug/L	20	--	20 U		20 U
Iron	ug/L	2865	--	955		1310
Lead	ug/L	7.5	--	2.5		4.5
Magnesium	ug/L	1827	--	609		1020
Manganese	ug/L	75	--	25		23.4
Mercury	ug/L	0.2	--	0.2 U		0.2 U
Nickel	ug/L	20	--	20 U		20 U
Potassium	ug/L	3150	--	1050		1840
Selenium	ug/L	2	--	2 U		2 U
Silver	ug/L	10	--	10 U		10 U
Sodium	ug/L	220500	--	73500		92700
Thallium	ug/L	2	--	2 U		2 U
Vanadium	ug/L	20	--	20 U		20 U
Zinc	ug/L	20	--	20 U		20 U
PCBs						
Aroclor-1016	ug/L	0.187	--	0.187 U		0.197 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	BG-01-00-11-120816 08/16/2012	BG-01-03-44 08/16/2012	DD-01-00-11-120814 08/14/2012
			Sample Type	Field Sample	Trip Blank	Field Sample
Aroclor-1221	ug/L	0.375	--	0.375 U		0.394 U
Aroclor-1232	ug/L	0.187	--	0.187 U		0.197 U
Aroclor-1242	ug/L	0.187	--	0.187 U		0.197 U
Aroclor-1248	ug/L	0.187	--	0.187 U		0.197 U
Aroclor-1254	ug/L	0.187	--	0.187 U		0.197 U
Aroclor-1260	ug/L	0.187	--	0.187 U		0.197 U
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.009 U		0.01 U
4,4'-DDE	ug/L	0.009	--	0.009 U		0.01 U
4,4'-DDT	ug/L	0.009	--	0.009 U		0.01 U
Aldrin	ug/L	0.009	--	0.009 U		0.01 U
alpha-BHC	ug/L	0.009	--	0.009 U		0.01 U
alpha-Chlordane	ug/L	0.009	--	0.009 U		0.01 U
beta-BHC	ug/L	0.009	--	0.009 U		0.01 U
delta-BHC	ug/L	0.009	--	0.009 U		0.01 U
Dieldrin	ug/L	0.009	--	0.009 U		0.01 U
Endosulfan I	ug/L	0.009	--	0.009 U		0.01 U
Endosulfan II	ug/L	0.009	--	0.009 U		0.01 U
Endosulfan sulfate	ug/L	0.009	--	0.009 U		0.01 U
Endrin	ug/L	0.009	--	0.009 U		0.01 U
Endrin aldehyde	ug/L	0.009	--	0.009 U		0.01 U
Endrin ketone	ug/L	0.009	--	0.009 U		0.01 U
gamma-BHC (Lindane)	ug/L	0.009	--	0.009 U		0.01 U
gamma-Chlordane	ug/L	0.009	--	0.009 U		0.01 U
Heptachlor	ug/L	0.009	--	0.009 U		0.01 U
Heptachlor epoxide	ug/L	0.009	--	0.009 U		0.01 U
Methoxychlor	ug/L	0.009	--	0.009 U		0.01 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	BG-01-00-11-120816 08/16/2012 Field Sample	BG-01-03-44 08/16/2012 Trip Blank	DD-01-00-11-120814 08/14/2012 Field Sample
Toxaphene	ug/L	0.281	--	0.281 U		0.296 U
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	BG-01-00-11-120816 08/16/2012 Field Sample	BG-01-03-44 08/16/2012 Trip Blank	DD-01-00-11-120814 08/14/2012 Field Sample
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-02-00-11-120814 08/14/2012 Field Sample	DD-03-00-11-120814 08/14/2012 Field Sample	DD-04-00-11-120814 08/14/2012 Field Sample
Metals						
Aluminum	ug/L	1302	--	1210	211	314
Antimony	ug/L	2	--	2 U	2 U	2 U
Arsenic	ug/L	2	--	2 U	2 U	2 U
Barium	ug/L	103.5	--	92.6	64.7	81.3
Beryllium	ug/L	5	--	5 U	5 U	5 U
Cadmium	ug/L	5	--	5 U	5 U	5 U
Calcium	ug/L	5310	--	14100	9590	9510
Chromium	ug/L	10	--	10 U	10 U	10 U
Chromium, hexavalent	ug/L	10	--			
Cobalt	ug/L	20	--	20 U	20 U	20 U
Copper	ug/L	20	--	20 U	20 U	20 U
Iron	ug/L	2865	--	2920	3860	4650
Lead	ug/L	7.5	--	2 U	2 U	8.5
Magnesium	ug/L	1827	--	2380	1880	1780
Manganese	ug/L	75	--	564	642	768
Mercury	ug/L	0.2	--	0.2 U	0.2 U	0.2 U
Nickel	ug/L	20	--	20 U	20 U	20 U
Potassium	ug/L	3150	--	3380	2990	2960
Selenium	ug/L	2	--	2 U	2 U	2 U
Silver	ug/L	10	--	10 U	10 U	10 U
Sodium	ug/L	220500	--	9360	10200	8200
Thallium	ug/L	2	--	2 U	2 U	2 U
Vanadium	ug/L	20	--	20 U	20 U	20 U
Zinc	ug/L	20	--	22	20 U	48.4
PCBs						
Aroclor-1016	ug/L	0.187	--	0.193 U	0.194 U	0.667 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	DD-02-00-11-120814 08/14/2012 Field Sample	DD-03-00-11-120814 08/14/2012 Field Sample	DD-04-00-11-120814 08/14/2012 Field Sample
Aroclor-1221	ug/L	0.375	--	0.386 U	0.387 U	1.33 U
Aroclor-1232	ug/L	0.187	--	0.193 U	0.194 U	0.667 U
Aroclor-1242	ug/L	0.187	--	0.193 U	0.194 U	0.667 U
Aroclor-1248	ug/L	0.187	--	0.193 U	0.194 U	0.667 U
Aroclor-1254	ug/L	0.187	--	0.193 U	0.194 U	0.667 U
Aroclor-1260	ug/L	0.187	--	0.193 U	0.194 U	0.667 U
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
4,4'-DDE	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
4,4'-DDT	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Aldrin	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
alpha-BHC	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
alpha-Chlordane	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
beta-BHC	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
delta-BHC	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Dieldrin	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Endosulfan I	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Endosulfan II	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Endosulfan sulfate	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Endrin	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Endrin aldehyde	ug/L	0.009	--	0.014 U	0.01 U	0.033 U
Endrin ketone	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
gamma-BHC (Lindane)	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
gamma-Chlordane	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Heptachlor	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Heptachlor epoxide	ug/L	0.009	--	0.01 U	0.01 U	0.033 U
Methoxychlor	ug/L	0.009	--	0.014 U	0.015 U	0.033 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-02-00-11-120814 08/14/2012 Field Sample	DD-03-00-11-120814 08/14/2012 Field Sample	DD-04-00-11-120814 08/14/2012 Field Sample
Toxaphene	ug/L	0.281	--	0.29 U	0.29 U	1 U
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	DD-02-00-11-120814 08/14/2012 Field Sample	DD-03-00-11-120814 08/14/2012 Field Sample	DD-04-00-11-120814 08/14/2012 Field Sample
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-00-12-120814 08/14/2012	DD-04-00-44-120814 08/14/2012	DD-05-03-44 08/16/2012
			Sample Type	Field Duplicate	Trip Blank	Trip Blank
Metals						
Aluminum	ug/L	1302	--	227		
Antimony	ug/L	2	--	2 U		
Arsenic	ug/L	2	--	2 U		
Barium	ug/L	103.5	--	67.3		
Beryllium	ug/L	5	--	5 U		
Cadmium	ug/L	5	--	5 U		
Calcium	ug/L	5310	--	9370		
Chromium	ug/L	10	--	10 U		
Chromium, hexavalent	ug/L	10	--			
Cobalt	ug/L	20	--	20 U		
Copper	ug/L	20	--	20 U		
Iron	ug/L	2865	--	3780		
Lead	ug/L	7.5	--	6.6		
Magnesium	ug/L	1827	--	1770		
Manganese	ug/L	75	--	369		
Mercury	ug/L	0.2	--	0.2 U		
Nickel	ug/L	20	--	20 U		
Potassium	ug/L	3150	--	2900		
Selenium	ug/L	2	--	2 U		
Silver	ug/L	10	--	10 U		
Sodium	ug/L	220500	--	8190		
Thallium	ug/L	2	--	2 U		
Vanadium	ug/L	20	--	20 U		
Zinc	ug/L	20	--	20 U		
PCBs						
Aroclor-1016	ug/L	0.187	--	0.193 U		

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-00-12-120814 08/14/2012	DD-04-00-44-120814 08/14/2012	DD-05-03-44 08/16/2012
			Sample Type	Field Duplicate	Trip Blank	Trip Blank
Aroclor-1221	ug/L	0.375	--	0.385 U		
Aroclor-1232	ug/L	0.187	--	0.193 U		
Aroclor-1242	ug/L	0.187	--	0.193 U		
Aroclor-1248	ug/L	0.187	--	0.193 U		
Aroclor-1254	ug/L	0.187	--	0.193 U		
Aroclor-1260	ug/L	0.187	--	0.193 U		
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.01 U		
4,4'-DDE	ug/L	0.009	--	0.01 U		
4,4'-DDT	ug/L	0.009	--	0.01 U		
Aldrin	ug/L	0.009	--	0.01 U		
alpha-BHC	ug/L	0.009	--	0.01 U		
alpha-Chlordane	ug/L	0.009	--	0.01 U		
beta-BHC	ug/L	0.009	--	0.01 U		
delta-BHC	ug/L	0.009	--	0.01 U		
Dieldrin	ug/L	0.009	--	0.01 U		
Endosulfan I	ug/L	0.009	--	0.01 U		
Endosulfan II	ug/L	0.009	--	0.01 U		
Endosulfan sulfate	ug/L	0.009	--	0.01 U		
Endrin	ug/L	0.009	--	0.01 U		
Endrin aldehyde	ug/L	0.009	--	0.014 U		
Endrin ketone	ug/L	0.009	--	0.01 U		
gamma-BHC (Lindane)	ug/L	0.009	--	0.01 U		
gamma-Chlordane	ug/L	0.009	--	0.01 U		
Heptachlor	ug/L	0.009	--	0.01 U		
Heptachlor epoxide	ug/L	0.009	--	0.01 U		
Methoxychlor	ug/L	0.009	--	0.019 U		

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	DD-04-00-12-120814 08/14/2012	DD-04-00-44-120814 08/14/2012	DD-05-03-44 08/16/2012
			Sample Type	Field Duplicate	Trip Blank	Trip Blank
Toxaphene	ug/L	0.281	--	0.289 U		
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	DD-04-00-12-120814 08/14/2012 Field Duplicate	DD-04-00-44-120814 08/14/2012 Trip Blank	DD-05-03-44 08/16/2012 Trip Blank
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-00-11-120816 08/16/2012 Field Sample	OP-02-00-12-120816 08/16/2012 Field Duplicate	PPE-01-00-11-120814 08/14/2012 Field Sample
Metals						
Aluminum	ug/L	1302	--	1620	1230	477
Antimony	ug/L	2	--	2 U	2 U	2 U
Arsenic	ug/L	2	--	2 U	2 U	2.4
Barium	ug/L	103.5	--	31.8	29.9	46.9
Beryllium	ug/L	5	--	5 U	5 U	5 U
Cadmium	ug/L	5	--	5 U	5 U	5 U
Calcium	ug/L	5310	--	5390	5330	2800
Chromium	ug/L	10	--	10 U	10 U	10 U
Chromium, hexavalent	ug/L	10	--			10 UH
Cobalt	ug/L	20	--	20 U	20 U	20 U
Copper	ug/L	20	--	20 U	20 U	20 U
Iron	ug/L	2865	--	995	692	1340
Lead	ug/L	7.5	--	3.4	3.1	4.4
Magnesium	ug/L	1827	--	915	889	1030
Manganese	ug/L	75	--	168	166	18.2
Mercury	ug/L	0.2	--	0.2 U	0.2 U	0.2 U
Nickel	ug/L	20	--	20 U	20 U	20 U
Potassium	ug/L	3150	--	1170	1150	1830
Selenium	ug/L	2	--	2 U	2 U	2 U
Silver	ug/L	10	--	10 U	10 U	10 U
Sodium	ug/L	220500	--	13100	13000	90700
Thallium	ug/L	2	--	2 U	2 U	2 U
Vanadium	ug/L	20	--	20 U	20 U	20 U
Zinc	ug/L	20	--	83.2	82.2	20 U
PCBs						
Aroclor-1016	ug/L	0.187	--	0.667 U	0.667 U	0.19 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-00-11-120816 08/16/2012 Field Sample	OP-02-00-12-120816 08/16/2012 Field Duplicate	PPE-01-00-11-120814 08/14/2012 Field Sample
Aroclor-1221	ug/L	0.375	--	1.33 U	1.33 U	0.381 U
Aroclor-1232	ug/L	0.187	--	0.667 U	0.667 U	0.19 U
Aroclor-1242	ug/L	0.187	--	0.667 U	0.667 U	0.19 U
Aroclor-1248	ug/L	0.187	--	0.667 U	0.667 U	0.19 U
Aroclor-1254	ug/L	0.187	--	0.667 U	0.667 U	0.19 U
Aroclor-1260	ug/L	0.187	--	0.667 U	0.667 U	0.19 U
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
4,4'-DDE	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
4,4'-DDT	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
Aldrin	ug/L	0.009	--	0.033 U	0.05 U	0.01 U
alpha-BHC	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
alpha-Chlordane	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
beta-BHC	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
delta-BHC	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
Dieldrin	ug/L	0.009	--	0.1 U	0.1 U	0.01 U
Endosulfan I	ug/L	0.009	--	0.067 U	0.033 U	0.01 U
Endosulfan II	ug/L	0.009	--	0.333 U	0.25 U	0.01 U
Endosulfan sulfate	ug/L	0.009	--	0.117 U	0.133 U	0.01 U
Endrin	ug/L	0.009	--	0.133 U	0.1 U	0.01 U
Endrin aldehyde	ug/L	0.009	--	0.083 U	0.083 U	0.01 U
Endrin ketone	ug/L	0.009	--	0.167 U	0.1 U	0.01 U
gamma-BHC (Lindane)	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
gamma-Chlordane	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
Heptachlor	ug/L	0.009	--	0.033 U	0.033 U	0.01 U
Heptachlor epoxide	ug/L	0.009	--	0.1 U	0.1 U	0.01 U
Methoxychlor	ug/L	0.009	--	0.333 U	0.3 U	0.01 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	OP-02-00-11-120816 08/16/2012 Field Sample	OP-02-00-12-120816 08/16/2012 Field Duplicate	PPE-01-00-11-120814 08/14/2012 Field Sample
Toxaphene	ug/L	0.281	--	1 U	1 U	0.286 U
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	8.8 J	9.1 J	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	OP-02-00-11-120816 08/16/2012 Field Sample	OP-02-00-12-120816 08/16/2012 Field Duplicate	PPE-01-00-11-120814 08/14/2012 Field Sample
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	PPE-02-00-11-120814 08/14/2012 Field Sample	PS-02-03-44 08/15/2012 Trip Blank	RD-01-03-44 08/15/2012 Trip Blank
Metals						
Aluminum	ug/L	1302	--	1760		
Antimony	ug/L	2	--	2 U		
Arsenic	ug/L	2	--	2 U		
Barium	ug/L	103.5	--	104		
Beryllium	ug/L	5	--	5 U		
Cadmium	ug/L	5	--	5 U		
Calcium	ug/L	5310	--	3440		
Chromium	ug/L	10	--	10 U		
Chromium, hexavalent	ug/L	10	--	10 UH		
Cobalt	ug/L	20	--	20 U		
Copper	ug/L	20	--	20 U		
Iron	ug/L	2865	--	2650		
Lead	ug/L	7.5	--	10.1		
Magnesium	ug/L	1827	--	1290		
Manganese	ug/L	75	--	148		
Mercury	ug/L	0.2	--	0.2 U		
Nickel	ug/L	20	--	20 U		
Potassium	ug/L	3150	--	2000		
Selenium	ug/L	2	--	2 U		
Silver	ug/L	10	--	10 U		
Sodium	ug/L	220500	--	91000		
Thallium	ug/L	2	--	2 U		
Vanadium	ug/L	20	--	20 U		
Zinc	ug/L	20	--	20 U		
PCBs						
Aroclor-1016	ug/L	0.187	--	0.193 U		

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	PPE-02-00-11-120814 08/14/2012 Field Sample	PS-02-03-44 08/15/2012 Trip Blank	RD-01-03-44 08/15/2012 Trip Blank
Aroclor-1221	ug/L	0.375	--	0.386 U		
Aroclor-1232	ug/L	0.187	--	0.193 U		
Aroclor-1242	ug/L	0.187	--	0.193 U		
Aroclor-1248	ug/L	0.187	--	0.193 U		
Aroclor-1254	ug/L	0.187	--	0.193 U		
Aroclor-1260	ug/L	0.187	--	0.193 U		
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.01 U		
4,4'-DDE	ug/L	0.009	--	0.01 U		
4,4'-DDT	ug/L	0.009	--	0.01 U		
Aldrin	ug/L	0.009	--	0.01 U		
alpha-BHC	ug/L	0.009	--	0.01 U		
alpha-Chlordane	ug/L	0.009	--	0.01 U		
beta-BHC	ug/L	0.009	--	0.01 U		
delta-BHC	ug/L	0.009	--	0.01 U		
Dieldrin	ug/L	0.009	--	0.01 U		
Endosulfan I	ug/L	0.009	--	0.01 U		
Endosulfan II	ug/L	0.009	--	0.01 U		
Endosulfan sulfate	ug/L	0.009	--	0.01 U		
Endrin	ug/L	0.009	--	0.01 U		
Endrin aldehyde	ug/L	0.009	--	0.01 U		
Endrin ketone	ug/L	0.009	--	0.01 U		
gamma-BHC (Lindane)	ug/L	0.009	--	0.01 U		
gamma-Chlordane	ug/L	0.009	--	0.01 U		
Heptachlor	ug/L	0.009	--	0.01 U		
Heptachlor epoxide	ug/L	0.009	--	0.01 U		
Methoxychlor	ug/L	0.009	--	0.01 U		

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	PPE-02-00-11-120814 08/14/2012 Field Sample	PS-02-03-44 08/15/2012 Trip Blank	RD-01-03-44 08/15/2012 Trip Blank
Toxaphene	ug/L	0.281	--	0.289 U		
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	PPE-02-00-11-120814 08/14/2012 Field Sample	PS-02-03-44 08/15/2012 Trip Blank	RD-01-03-44 08/15/2012 Trip Blank
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date	SW-01-00-11-120814 08/14/2012 Field Sample	SW-01-00-44-120814 08/14/2012 Trip Blank	SW-02-00-11-120814 08/14/2012 Field Sample
Metals						
Aluminum	ug/L	1302	--	407 J		1470 J
Antimony	ug/L	2	--	2 U		2 U
Arsenic	ug/L	2	--	2		3.2
Barium	ug/L	103.5	--	43.4		74.1
Beryllium	ug/L	5	--	5 U		5 U
Cadmium	ug/L	5	--	5 U		5 U
Calcium	ug/L	5310	--	2850		3180
Chromium	ug/L	10	--	10 U		10 U
Chromium, hexavalent	ug/L	10	--			
Cobalt	ug/L	20	--	20 U		20 U
Copper	ug/L	20	--	20 U		20 U
Iron	ug/L	2865	--	1270		2700 J
Lead	ug/L	7.5	--	4.1		13.1
Magnesium	ug/L	1827	--	1040		1160
Manganese	ug/L	75	--	16.9		92.5
Mercury	ug/L	0.2	--	0.2 U		0.2 U
Nickel	ug/L	20	--	20 U		20 U
Potassium	ug/L	3150	--	1870		1950
Selenium	ug/L	2	--	2 U		2 U
Silver	ug/L	10	--	10 U		10 U
Sodium	ug/L	220500	--	91400		90200
Thallium	ug/L	2	--	2 U		2 U
Vanadium	ug/L	20	--	20 U		20 U
Zinc	ug/L	20	--	20 U		22.2
PCBs						
Aroclor-1016	ug/L	0.187	--	0.189 U		0.667 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-01-00-11-120814 08/14/2012 Field Sample	SW-01-00-44-120814 08/14/2012 Trip Blank	SW-02-00-11-120814 08/14/2012 Field Sample
Aroclor-1221	ug/L	0.375	--	0.377 U		1.33 U
Aroclor-1232	ug/L	0.187	--	0.189 U		0.667 U
Aroclor-1242	ug/L	0.187	--	0.189 U		0.667 U
Aroclor-1248	ug/L	0.187	--	0.189 U		0.667 U
Aroclor-1254	ug/L	0.187	--	0.189 U		0.667 U
Aroclor-1260	ug/L	0.187	--	0.189 U		0.667 U
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.009 U		0.033 U
4,4'-DDE	ug/L	0.009	--	0.009 U		0.033 U
4,4'-DDT	ug/L	0.009	--	0.009 U		0.033 U
Aldrin	ug/L	0.009	--	0.009 U		0.033 U
alpha-BHC	ug/L	0.009	--	0.009 U		0.033 U
alpha-Chlordane	ug/L	0.009	--	0.009 U		0.033 U
beta-BHC	ug/L	0.009	--	0.009 U		0.033 U
delta-BHC	ug/L	0.009	--	0.009 U		0.033 U
Dieldrin	ug/L	0.009	--	0.009 U		0.033 U
Endosulfan I	ug/L	0.009	--	0.009 U		0.033 U
Endosulfan II	ug/L	0.009	--	0.009 U		0.033 U
Endosulfan sulfate	ug/L	0.009	--	0.009 U		0.033 U
Endrin	ug/L	0.009	--	0.009 U		0.033 U
Endrin aldehyde	ug/L	0.009	--	0.009 U		0.033 U
Endrin ketone	ug/L	0.009	--	0.009 U		0.033 U
gamma-BHC (Lindane)	ug/L	0.009	--	0.009 U		0.033 U
gamma-Chlordane	ug/L	0.009	--	0.009 U		0.033 U
Heptachlor	ug/L	0.009	--	0.009 U		0.033 U
Heptachlor epoxide	ug/L	0.009	--	0.009 U		0.033 U
Methoxychlor	ug/L	0.009	--	0.009 U		0.033 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-01-00-11-120814 08/14/2012 Field Sample	SW-01-00-44-120814 08/14/2012 Trip Blank	SW-02-00-11-120814 08/14/2012 Field Sample
Toxaphene	ug/L	0.281	--	0.283 U		1 U
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-01-00-11-120814 08/14/2012 Field Sample	SW-01-00-44-120814 08/14/2012 Trip Blank	SW-02-00-11-120814 08/14/2012 Field Sample
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-03-00-11-120814 08/14/2012 Field Sample	SW-04-00-11-120816 08/16/2012 Field Sample	SW-05-00-11-120816 08/16/2012 Field Sample
Metals						
Aluminum	ug/L	1302	--	506	609	778
Antimony	ug/L	2	--	2 U	2 U	2 U
Arsenic	ug/L	2	--	2.5	2 U	2 U
Barium	ug/L	103.5	--	47.8	46.2	50.4
Beryllium	ug/L	5	--	5 U	5 U	5 U
Cadmium	ug/L	5	--	5 U	5 U	5 U
Calcium	ug/L	5310	--	2970	2990	3320
Chromium	ug/L	10	--	10 U	10 U	10 U
Chromium, hexavalent	ug/L	10	--			
Cobalt	ug/L	20	--	20 U	20 U	20 U
Copper	ug/L	20	--	20 U	20 U	20 U
Iron	ug/L	2865	--	1370	1430	1660
Lead	ug/L	7.5	--	4.7	4.8	7.4
Magnesium	ug/L	1827	--	1100	1090	1160
Manganese	ug/L	75	--	21.8	28.8	34.4
Mercury	ug/L	0.2	--	0.2 U	0.2 U	0.2 U
Nickel	ug/L	20	--	20 U	20 U	20 U
Potassium	ug/L	3150	--	1920	1810	1880
Selenium	ug/L	2	--	2 U	2 U	2 U
Silver	ug/L	10	--	10 U	10 U	10 U
Sodium	ug/L	220500	--	91300	85600	88400
Thallium	ug/L	2	--	2 U	2 U	2 U
Vanadium	ug/L	20	--	20 U	20 U	20 U
Zinc	ug/L	20	--	20 U	20 U	20 U
PCBs						
Aroclor-1016	ug/L	0.187	--	0.667 U	0.19 U	0.667 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-03-00-11-120814 08/14/2012 Field Sample	SW-04-00-11-120816 08/16/2012 Field Sample	SW-05-00-11-120816 08/16/2012 Field Sample
Aroclor-1221	ug/L	0.375	--	1.33 U	0.38 U	1.33 U
Aroclor-1232	ug/L	0.187	--	0.667 U	0.19 U	0.667 U
Aroclor-1242	ug/L	0.187	--	0.667 U	0.19 U	0.667 U
Aroclor-1248	ug/L	0.187	--	0.667 U	0.19 U	0.667 U
Aroclor-1254	ug/L	0.187	--	0.667 U	0.19 U	0.667 U
Aroclor-1260	ug/L	0.187	--	0.667 U	0.19 U	0.667 U
Pesticides						
4,4'-DDD	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
4,4'-DDE	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
4,4'-DDT	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Aldrin	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
alpha-BHC	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
alpha-Chlordane	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
beta-BHC	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
delta-BHC	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Dieldrin	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Endosulfan I	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Endosulfan II	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Endosulfan sulfate	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Endrin	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Endrin aldehyde	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Endrin ketone	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
gamma-BHC (Lindane)	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
gamma-Chlordane	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Heptachlor	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Heptachlor epoxide	ug/L	0.009	--	0.033 U	0.009 U	0.033 U
Methoxychlor	ug/L	0.009	--	0.033 U	0.009 U	0.033 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-03-00-11-120814 08/14/2012 Field Sample	SW-04-00-11-120816 08/16/2012 Field Sample	SW-05-00-11-120816 08/16/2012 Field Sample
Toxaphene	ug/L	0.281	--	1 U	0.285 U	1 U
Volatiles						
1,1,1-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2,2-Tetrachloroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	1	--	1 U	1 U	1 U
1,1,2-Trichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,1-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
1,2,4-Trichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dibromo-3-chloropropane	ug/L	2	--	2 U	2 U	2 U
1,2-Dibromoethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloroethane	ug/L	1	--	1 U	1 U	1 U
1,2-Dichloropropane	ug/L	1	--	1 U	1 U	1 U
1,3-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
1,4-Dichlorobenzene	ug/L	1	--	1 U	1 U	1 U
2-Butanone	ug/L	5	--	5 U	5 U	5 U
2-Hexanone	ug/L	5	--	5 U	5 U	5 U
4-Methyl-2-pentanone	ug/L	5	--	5 U	5 U	5 U
Acetone	ug/L	5	--	5 U	5 U	5 U
Benzene	ug/L	1	--	1 U	1 U	1 U
Bromodichloromethane	ug/L	1	--	1 U	1 U	1 U
Bromoform	ug/L	1	--	1 U	1 U	1 U
Bromomethane	ug/L	1	--	1 U	1 U	1 U
Carbon disulfide	ug/L	1	--	1 U	1 U	1 U
Carbon tetrachloride	ug/L	1	--	1 U	1 U	1 U
Chlorobenzene	ug/L	1	--	1 U	1 U	1 U

Table 4
Surface Water Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	3x Background	Sample ID Date Sample Type	SW-03-00-11-120814 08/14/2012 Field Sample	SW-04-00-11-120816 08/16/2012 Field Sample	SW-05-00-11-120816 08/16/2012 Field Sample
Chloroethane	ug/L	1	--	1 U	1 U	1 U
Chloroform	ug/L	1	--	1 U	1 U	1 U
Chloromethane	ug/L	1	--	1 U	1 U	1 U
cis-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
cis-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Cyclohexane	ug/L	1	--	1 U	1 U	1 U
Dibromochloromethane	ug/L	1	--	1 U	1 U	1 U
Dichlorodifluoromethane	ug/L	1	--	1 U	1 U	1 U
Ethylbenzene	ug/L	1	--	1 U	1 U	1 U
Isopropylbenzene	ug/L	1	--	1 U	1 U	1 U
meta-/para-Xylene	ug/L	2	--	2 U	2 U	2 U
Methyl acetate	ug/L	1	--	1 U	1 U	1 U
Methyl tert-butyl ether	ug/L	1	--	1 U	1 U	1 U
Methylcyclohexane	ug/L	1	--	1 U	1 U	1 U
Methylene chloride	ug/L	2	--	2 U	2 U	2 U
ortho-Xylene	ug/L	1	--	1 U	1 U	1 U
pH	ug/L	2	--	2	2	2
Styrene	ug/L	1	--	1 U	1 U	1 U
Tetrachloroethene	ug/L	1	--	1 U	1 U	1 U
Toluene	ug/L	1	--	1 U	1 U	1 U
trans-1,2-Dichloroethene	ug/L	1	--	1 U	1 U	1 U
trans-1,3-Dichloropropene	ug/L	1	--	1 U	1 U	1 U
Trichloroethene	ug/L	1	--	1 U	1 U	1 U
Trichlorofluoromethane	ug/L	1	--	1 U	1 U	1 U
Vinyl chloride	ug/L	1	--	1 U	1 U	1 U

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Metals				
Aluminum	mg/kg	--		45.4 J
Antimony	mg/kg	--		0.09 U
Arsenic	mg/kg	--		0.09 U
Barium	mg/kg	--		0.3
Beryllium	mg/kg	--		0.05 U
Cadmium	mg/kg	--		0.05 U
Calcium	mg/kg	--		6 B
Chromium	mg/kg	--		0.6
Cobalt	mg/kg	--		0.2 U
Copper	mg/kg	--		0.3
Iron	mg/kg	--		46.2
Lead	mg/kg	--		0.6
Magnesium	mg/kg	--		4.5 B
Manganese	mg/kg	--		0.07
Nickel	mg/kg	--		0.2 U
Potassium	mg/kg	--		19.7 B
Selenium	mg/kg	--		1.8
Silver	mg/kg	--		0.09 U
Sodium	mg/kg	--		18.2 B
Thallium	mg/kg	--		0.1
Vanadium	mg/kg	--		1.6
Zinc	mg/kg	--		0.6 B
Aluminum	ug/L	--	4100	
Antimony	ug/L	--	5 U	
Arsenic	ug/L	--	5 U	
Barium	ug/L	--	43.9	

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Beryllium	ug/L	--	10 U	
Cadmium	ug/L	--	10 U	
Calcium	ug/L	--	13700	
Chromium	ug/L	--	20 U	
Cobalt	ug/L	--	40 U	
Copper	ug/L	--	40 U	
Iron	ug/L	--	6320	
Lead	ug/L	--	6.8	
Magnesium	ug/L	--	6760	
Manganese	ug/L	--	824	
Mercury	ug/L	--	0.4 U	66.1 U
Nickel	ug/L	--	40 U	
Potassium	ug/L	--	10200	
Selenium	ug/L	--	5 U	
Silver	ug/L	--	20 U	
Sodium	ug/L	--	38100	
Thallium	ug/L	--	5 U	
Vanadium	ug/L	--	40 U	
Zinc	ug/L	--	158	
PCBs				
Aroclor-1016	mg/kg	--		3.96 U
Aroclor-1221	mg/kg	--		7.93 U
Aroclor-1232	mg/kg	--		3.96 U
Aroclor-1242	mg/kg	--		3.96 U
Aroclor-1248	mg/kg	--		3.96 U
Aroclor-1254	mg/kg	--		3.96 U
Aroclor-1260	mg/kg	--		3.96 U

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Aroclor-1016	ug/L	--	10 U	
Aroclor-1221	ug/L	--	20 U	
Aroclor-1232	ug/L	--	10 U	
Aroclor-1242	ug/L	--	10 U	
Aroclor-1248	ug/L	--	10 U	
Aroclor-1254	ug/L	--	10 U	
Aroclor-1260	ug/L	--	10 U	
Pesticides				
4,4'-DDD	mg/kg	--		0.198 U
4,4'-DDE	mg/kg	--		0.198 U
4,4'-DDT	mg/kg	--		0.198 U
Aldrin	mg/kg	--		0.198 U
alpha-BHC	mg/kg	--		0.198 U
alpha-Chlordane	mg/kg	--		0.198 U
beta-BHC	mg/kg	--		0.198 U
delta-BHC	mg/kg	--		0.198 U
Dieldrin	mg/kg	--		0.198 U
Endosulfan I	mg/kg	--		0.198 U
Endosulfan II	mg/kg	--		0.198 U
Endosulfan sulfate	mg/kg	--		0.297 U
Endrin	mg/kg	--		0.198 U
Endrin aldehyde	mg/kg	--		0.297 U
Endrin ketone	mg/kg	--		0.198 U
gamma-BHC (Lindane)	mg/kg	--		0.198 U
gamma-Chlordane	mg/kg	--		0.198 U
Heptachlor	mg/kg	--		0.198 U
Heptachlor epoxide	mg/kg	--		0.198 U

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Methoxychlor	mg/kg	--		0.396 U
Toxaphene	mg/kg	--		5.95 U
4,4'-DDD	ug/L	--	0.5 U	
4,4'-DDE	ug/L	--	0.5 U	
4,4'-DDT	ug/L	--	0.5 U	
Aldrin	ug/L	--	0.5 U	
alpha-BHC	ug/L	--	0.5 U	
alpha-Chlordane	ug/L	--	0.5 U	
beta-BHC	ug/L	--	0.5 U	
delta-BHC	ug/L	--	0.5 U	
Dieldrin	ug/L	--	0.5 U	
Endosulfan I	ug/L	--	0.5 U	
Endosulfan II	ug/L	--	0.5 U	
Endosulfan sulfate	ug/L	--	0.5 U	
Endrin	ug/L	--	0.5 U	
Endrin aldehyde	ug/L	--	0.5 U	
Endrin ketone	ug/L	--	0.5 U	
gamma-BHC (Lindane)	ug/L	--	0.5 U	
gamma-Chlordane	ug/L	--	0.5 U	
Heptachlor	ug/L	--	0.5 U	
Heptachlor epoxide	ug/L	--	0.5 U	
Methoxychlor	ug/L	--	0.75 U	
Toxaphene	ug/L	--	15 U	
SVOCs				
2-Methylnaphthalene	mg/kg	--		3.49
Acenaphthene	mg/kg	--		8.46
Acenaphthylene	mg/kg	--		2.74

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Anthracene	mg/kg	--		11.2
Benzo(a)anthracene	mg/kg	--		9.48
Benzo(a)pyrene	mg/kg	--		2.88
Benzo(b and/or k) fluoranthene	mg/kg	--		2.42
Benzo(g,h,i)perylene	mg/kg	--		2.1
Chrysene	mg/kg	--		14.7
Dibenzo(a,h)anthracene	mg/kg	--		0.715
Fluoranthene	mg/kg	--		4.11
Fluorene	mg/kg	--		6.16
Indeno(1,2,3-cd)pyrene	mg/kg	--		0.482
Naphthalene	mg/kg	--		2.63
Phenanthrene	mg/kg	--		9.2
Pyrene	mg/kg	--		32.8
2-Methylnaphthalene	mg/kg	--	3.06	--
Acenaphthene	ug/L	--	7.35	--
Acenaphthylene	ug/L	--	3.12	--
Anthracene	ug/L	--	4.9	--
Benzo(a)anthracene	ug/L	--	4.2	--
Benzo(a)pyrene	ug/L	--	2.00 U	--
Benzo(b and/or k) fluoranthene	ug/L	--	2.00 U	--
Benzo(g,h,i)perylene	ug/L	--	2.00 U	--
Chrysene	ug/L	--	11	--
Dibenzo(a,h)anthracene	ug/L	--	2.00 U	--
Fluoranthene	ug/L	--	5.41	--
Fluorene	ug/L	--	4.61	--
Indeno(1,2,3-cd)pyrene	ug/L	--	2.00 U	--
Naphthalene	ug/L	--	2.61	--

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Phenanthrene	ug/L	--	9.45	--
Pyrene	ug/L	--	23.4	--
Volatiles				
1,1,1-Trichloroethane	mg/kg	--		2.46 U
1,1,2,2-Tetrachloroethane	mg/kg	--		2.46 U
1,1,2-Trichloro-1,2,2-trifluoroethane	mg/kg	--		2.46 U
1,1,2-Trichloroethane	mg/kg	--		2.46 U
1,1-Dichloroethane	mg/kg	--		2.46 U
1,1-Dichloroethene	mg/kg	--		2.46 U
1,2,4-Trichlorobenzene	mg/kg	--		6.15 U
1,2-Dibromo-3-chloropropane	mg/kg	--		6.15 U
1,2-Dibromoethane	mg/kg	--		2.46 U
1,2-Dichlorobenzene	mg/kg	--		2.46 U
1,2-Dichloroethane	mg/kg	--		2.46 U
1,2-Dichloropropane	mg/kg	--		2.46 U
1,3-Dichlorobenzene	mg/kg	--		2.46 U
1,4-Dichlorobenzene	mg/kg	--		2.46 U
2-Butanone	mg/kg	--		6.15 U
2-Hexanone	mg/kg	--		6.15 U
4-Methyl-2-pentanone	mg/kg	--		6.15 U
Acetone	mg/kg	--		12.3 U
Benzene	mg/kg	--		2.46 U
Bromodichloromethane	mg/kg	--		2.46 U
Bromoform	mg/kg	--		2.46 U
Bromomethane	mg/kg	--		6.15 U
Carbon disulfide	mg/kg	--		2.46 U
Carbon tetrachloride	mg/kg	--		2.46 U

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
Chlorobenzene	mg/kg	--		2.46 U
Chloroethane	mg/kg	--		4.92 U
Chloroform	mg/kg	--		2.46 U
Chloromethane	mg/kg	--		6.15 U
cis-1,2-Dichloroethene	mg/kg	--		2.46 U
cis-1,3-Dichloropropene	mg/kg	--		2.46 U
Cyclohexane	mg/kg	--		2.46 U
Dibromochloromethane	mg/kg	--		2.46 U
Dichlorodifluoromethane	mg/kg	--		6.15 U
Ethylbenzene	mg/kg	--		2.46 U
Isopropylbenzene	mg/kg	--		2.46 U
meta-/para-Xylene	mg/kg	--		4.92 U
Methyl acetate	mg/kg	--		6.15 U
Methyl tert-butyl ether	mg/kg	--		2.46 U
Methylcyclohexane	mg/kg	--		2.46 U
Methylene chloride	mg/kg	--		2.46 U
ortho-Xylene	mg/kg	--		2.46 U
Styrene	mg/kg	--		2.46 U
Tetrachloroethene	mg/kg	--		2.46 U
Toluene	mg/kg	--		2.46 U
trans-1,2-Dichloroethene	mg/kg	--		2.46 U
trans-1,3-Dichloropropene	mg/kg	--		2.46 U
Trichloroethene	mg/kg	--		2.46 U
Trichlorofluoromethane	mg/kg	--		12.3 U
Vinyl chloride	mg/kg	--		2.46 U
1,1,1-Trichloroethane	ug/L	--	10 U	
1,1,2,2-Tetrachloroethane	ug/L	--	10 U	

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
1,1,2-Trichloro-1,2,2-trifluoroethane	ug/L	--	10 U	
1,1,2-Trichloroethane	ug/L	--	10 U	
1,1-Dichloroethane	ug/L	--	10 U	
1,1-Dichloroethene	ug/L	--	10 U	
1,2,4-Trichlorobenzene	ug/L	--	10 U	
1,2-Dibromo-3-chloropropane	ug/L	--	20 U	
1,2-Dibromoethane	ug/L	--	10 U	
1,2-Dichlorobenzene	ug/L	--	10 U	
1,2-Dichloroethane	ug/L	--	10 U	
1,2-Dichloropropane	ug/L	--	10 U	
1,3-Dichlorobenzene	ug/L	--	10 U	
1,4-Dichlorobenzene	ug/L	--	10 U	
2-Butanone	ug/L	--	50 U	
2-Hexanone	ug/L	--	50 U	
4-Methyl-2-pentanone	ug/L	--	50 U	
Acetone	ug/L	--	50 U	
Benzene	ug/L	--	10 U	
Bromodichloromethane	ug/L	--	10 U	
Bromoform	ug/L	--	10 U	
Bromomethane	ug/L	--	10 U	
Carbon disulfide	ug/L	--	10 U	
Carbon tetrachloride	ug/L	--	10 U	
Chlorobenzene	ug/L	--	10 U	
Chloroethane	ug/L	--	10 U	
Chloroform	ug/L	--	10 U	
Chloromethane	ug/L	--	10 U	
cis-1,2-Dichloroethene	ug/L	--	10 U	

Table 5
Waste Sample Analytical Results Summary
MacMillan Ring Free Oil
Norphlet, Arkansas

Analyte	Units	Sample ID Date Sample Type	IDW-01-00-21 08/16/2012 Field Sample	MW-1-120816-21 08/16/2012 Field Sample
cis-1,3-Dichloropropene	ug/L	--	10 U	
Cyclohexane	ug/L	--	10 U	
Dibromochloromethane	ug/L	--	10 U	
Dichlorodifluoromethane	ug/L	--	10 U	
Ethylbenzene	ug/L	--	10 U	
Isopropylbenzene	ug/L	--	10 U	
meta-/para-Xylene	ug/L	--	20 U	
Methyl acetate	ug/L	--	10 U	
Methyl tert-butyl ether	ug/L	--	10 U	
Methylcyclohexane	ug/L	--	10 U	
Methylene chloride	ug/L	--	20 U	
ortho-Xylene	ug/L	--	10 U	
pH	ug/L	--	5	
Styrene	ug/L	--	10 U	
Tetrachloroethene	ug/L	--	10 U	
Toluene	ug/L	--	10 U	
trans-1,2-Dichloroethene	ug/L	--	10 U	
trans-1,3-Dichloropropene	ug/L	--	10 U	
Trichloroethene	ug/L	--	10 U	
Trichlorofluoromethane	ug/L	--	10 U	
Vinyl chloride	ug/L	--	10 U	

ATTACHMENT F
WETLAND EVALUATION MEMORANDUM



MEMORANDUM

Weston Solutions, Inc.
5599 San Felipe, Suite 700
Houston, Texas 77056
Phone: (713) 985-6768
Fax (713) 985-6703

TO: Michelle Brown

COPY:

FROM: Patrick Warnick *Patricia W. S.*

SUBJECT: Wetlands Evaluation

EXECUTIVE SUMMARY

This memorandum presents the results of a wetland survey performed 16 August 2012 at a former storm water retention pond adjacent to Flat Creek east of East Hayes Road in Norphlet, Union County, Arkansas. The surveyed areas are east of the former Norphlet Chemical site and downstream of a potential point of discharge from the subject property. The survey was conducted to evaluate approximately 26,250 square feet, 0.603 acres of a former pond area, and 2,000 linear feet directly adjacent to Hayes Creek for wetland characteristics.

Based on a review of the published material, and the observations made during the survey, the area within the former man-made storm water retention pond, under normal circumstances, does function as a wetland, but is unlikely to be under the jurisdiction of the USACE. The area adjacent to Hayes Creek, extending approximately 100-feet from the bank functions as riparian habitat, and is dependent on the creek to maintain this unique habitat.

BACKGROUND AND DESCRIPTION OF THE PROPERTY

Section 404 of the CWA defines wetlands as areas inundated or saturated by surface or groundwater at a frequency and duration sufficient to support, under normal circumstances, a prevalence of vegetation typically adapted for life in saturated soil conditions. The unique characteristics of wetlands are created by the interactions between hydrology, soil and vegetation. The current federal wetland methodology used is the 1987 Corps of Engineers Wetlands Delineation Manual. Under normal circumstances evidence of a minimum of one positive wetland indicator from each parameter (hydrology, soil and vegetation) must be found in order to make a positive wetland determination.

The survey area includes the former storm water retention pond and the area adjacent to Hayes Creek that is outside of the ordinary high water mark. Water from the former storm water retention pond does flow to Hayes Creek, which is a perennial creek that runs northwest to southeast through the area and is located approximately 200 feet to the east of the former retention pond. The former retention pond has two culverts, approximately 24 inches in diameter, discharging storm water from the former Norphlet chemical site to the pond. In addition, sheet flow from surrounding areas appears to runoff into the former retention pond as

well. A manmade earthen dike extending from the northern end of the pond to the southwestern end of the pond traps storm water, which is then discharged through a 12 inch culvert located on the eastern, outward face, of the manmade dike near the northern end of the retention pond. During the delineation, most of the former retention pond was dry, with the exception of the northern area which contained approximately 12 to 18 inches of water during the survey.

The survey area along Hayes Creek extended from east of the former storm water retention pond approximately 2,000 feet south-southeast along Hayes Creek. The creek in the area is perennial and contained approximately two to four feet of water during the survey. The banks of the creek in the survey area vary from moderately cut to steep and sharply cut. The banks range from approximately two to 5 feet in height. The surrounding areas are an open field that was once a pond but has since been closed, an industrial site, and undeveloped forestland that may contain oilfield waste and debris.

REVIEW OF PUBLISHED MATERIALS

Published materials were reviewed to provide site background information, and to identify any previously delineated wetland and other water areas in the vicinity of the survey area. Materials reviewed included the Union County soil surveys (NRCS 2006), aerial photos, Federal Emergency Management Agency (FEMA) floodplain map, and the National Wetlands Inventory (NWI) map for the area. Details of the review are provided in the following sections.

Soils

The Union County, Arkansas Soil survey performed by the United States Department of Agriculture National Resource Conservation Service (USDA NRCS) was reviewed to evaluate if the soil types present at the site are classified as hydric soil based on the USDA national hydric soil list. Hydric soil is formed under conditions of saturation, flooding or ponding for a period long enough during the growing season to develop anaerobic conditions in the upper part of the soil unit. The designation by the soil survey of a hydric soil at the site would be considered a secondary indicator of wetland hydrology, and provides valuable information for selecting areas of possible wetlands.

Based on the county soil survey, there are two mapped soil types present in or near the surveyed area (Attachment 1). The soils are part of the Bibb Series and the Warnock Series. The Bibb Series consists of very deep, poorly drained, moderately permeable soils that formed in loamy and sandy alluvium. These soils are on nearly level flood plains. Slopes are dominantly less than 1 percent. This soil type is presented on the Arkansas and national hydric soil list and is therefore considered a wetland indicator.

The Warnock Series consists of very deep, moderately well drained, moderately permeable soils that formed in loamy marine deposits. These soils occur on hills with slopes of one to eight percent. This soil type is not presented on the Arkansas and national hydric soil list and is therefore not considered a wetland indicator.

Aerial Photography and National Wetlands Inventory Review

Aerial photos, the FEMA flood map, and a National Wetlands Inventory (NWI) map were reviewed prior to beginning the wetland survey to identify areas where wetlands might be present. Based on the review of the aerial photos, this area of the former Norphlet Chemical property exhibited wetland characteristics. Standing water appears to be visible in three aerial photographs taken on 21 March 1994, 27 March 2000, and 30 April 2004. Five subsequent aerial photos, taken from 10 January 2006 through 18 April 2012, show this same area of the property without standing water.

No wetland areas are identified on the NWI map within the survey area (Attachment 2). The vegetation species present in the nearby mapped palustrine areas is consistent with the vegetation in the survey area.

The Federal Emergency Management Agency (FEMA) floodplain maps were reviewed. The pond area is outside of the 100 and 500-year flood plain, but the area surrounding Hayes Creek on both sides of the creek is within a special flood hazard area subject to inundation by the 1% annual chance flood.

WETLAND DELINEATIONS

Following the guidance provided in the 1987 Corps of Engineers Wetland Delineation Manual (USA-EL, 1987) and best professional judgment, the survey area was assessed for the presence of wetlands. The 1987 Manual requires that a three parameter approach be used for wetland delineation; the predominant vegetation must be hydrophytic, the soils must be hydric, and wetland hydrology must be present at undisturbed sites. The entire survey area was visually observed, and a single soil pit was advanced approximately 20 feet from the upper bank of the storm water retention pond.

Vegetation was identified within the survey area. The wetland indicator status of identified species was categorized (NRCS, 2012). The dominant vegetation within the survey area was Loblolly Pine (*Pinus taeda*), Black Willow (*Salix nigra*), Eastern Gamagrass (*Tripsacum dactyloids*), and Wooly Croton (*Croton capitatus*). Black Willow occurs in patches within the retention pond area, while Wooly Croton and Eastern Gamagrass cover 90 percent of the retention pond. Loblolly Pines are common along the sides and tops of the banks of the retention pond. Using the Prevalence Index Test to determine the dominance of hydrophytic vegetation yielded a Prevalence Index of 3.06, indicating that the vegetation is not dominated by species considered to be hydrophytic. However, it should be noted that the Union County and the majority of southern Arkansas has been in a period of drought for the past three years resulting in abnormal conditions. The species adjacent to the upper banks are associated with riparian areas, and based on their dominant indicator status of facultative, are a positive wetland indicator and represents riparian habitat.

The soil in the survey area was evaluated for wetland indicator status. The soil appeared to be the native soil described in the NRCS soil survey for Union County. The soil is primarily fine sand and is high in chroma color based on the Munsell soil color chart (10YR 7/2). The soil contained masses of oxidized iron with a color of 10YR 5/6 on the Munsell soil color chart. These oxidized iron masses occurred from 2-16 inches below ground surface. These soil characteristics indicate the soil is likely a part of the Bibb Series described previously and is identified on the local and national hydric soil list.

Wetland hydrology was identified within the survey area. Standing water was observed in the survey area; however, no water entered the soil pit, and saturated soil was not observed. Drift deposits were observed in the survey area, a primary indicator of hydrology, as was surface soil cracks and sparsely vegetated concave surfaces, both secondary indicators of hydrology within the former pond area. Water marks were observed on the base of some of the trees closest to the top of the creek banks. The water marks appeared to be present as a result of high rain events and temporary flooding of the creek. Although wetland hydrology was not identified in the survey area, evidence of occasional flooding was noted. Based on the observations during the site visit, the hydrology of the survey area is a positive indicator for wetland status.

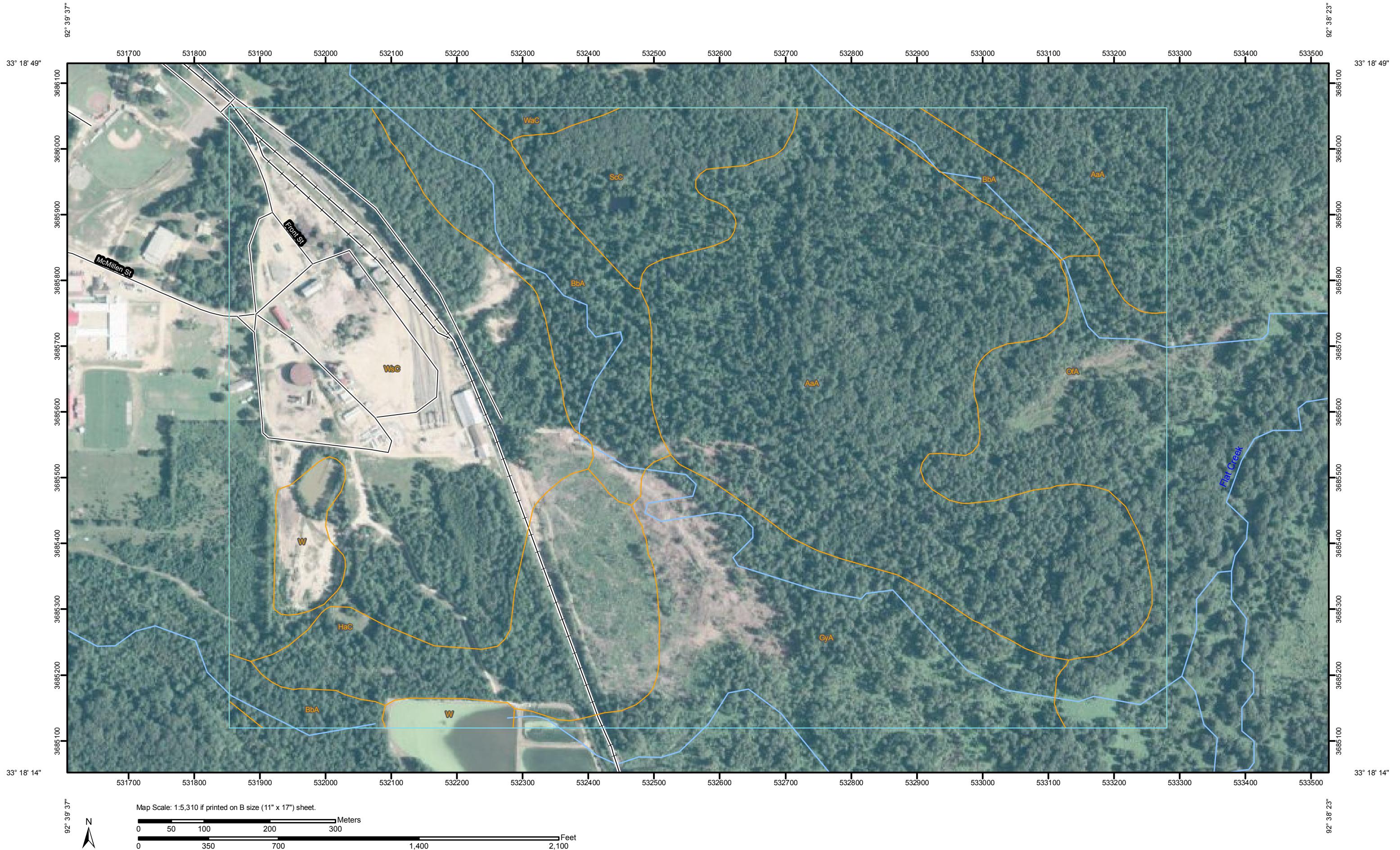
CONCLUSIONS AND RECOMMENDATIONS

The survey area located at the former stormwater retention pond at the former Norphlet Chemical site and along the banks of Hayes Creek in Norphlet, Union County Arkansas was evaluated for the presence of wetlands. Wetland soil and wetland hydrology were present at the site, and although the vegetation at the site did not pass the Prevalence Index Test, the sustained drought throughout the area has likely aided the spread of vegetation with upland indicator status causing the Prevalence Index Test results to be skewed toward showing that the vegetation is not dominated by species considered to be hydrophytic. Therefore, the surveyed area at the former pond is representative of a wetland, and the area along Hayes Creek is representative of riparian habitat.

Patrick Warnick Associate Project Scientist	4 Years	Masters of Marine Resource Management B.A. Business Administration and Environmental Studies Wetland Delineation Training	Environmental and Ecological Assessments, Habitat Assessments, Wetland Delineations, Ecological Risk Assessment
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**ATTACHMENT 1
SOIL SURVEY MAP OF UNION COUNTY**

Soil Map—Union County, Arkansas
(Norphlet Chemical)



MAP LEGEND

Area of Interest (AOI)	
	Area of Interest (AOI)
Soils	
	Soil Map Units
Special Point Features	
	Blowout
	Borrow Pit
	Clay Spot
	Closed Depression
	Gravel Pit
	Gravelly Spot
	Landfill
	Lava Flow
	Marsh or swamp
	Mine or Quarry
	Miscellaneous Water
	Perennial Water
	Rock Outcrop
	Saline Spot
	Sandy Spot
	Severely Eroded Spot
	Sinkhole
	Slide or Slip
	Sodic Spot
	Spoil Area
	Stony Spot
Special Line Features	
	Very Stony Spot
	Wet Spot
	Other
Political Features	
	Cities
Water Features	
	Streams and Canals
Transportation	
	Rails
	Interstate Highways
	US Routes
	Major Roads
	Local Roads

MAP INFORMATION

Map Scale: 1:5,310 if printed on B size (11" × 17") sheet.

The soil surveys that comprise your AOI were mapped at 1:24,000.

Warning: Soil Map may not be valid at this scale.

Enlargement of maps beyond the scale of mapping can cause misunderstanding of the detail of mapping and accuracy of soil line placement. The maps do not show the small areas of contrasting soils that could have been shown at a more detailed scale.

Please rely on the bar scale on each map sheet for accurate map measurements.

Source of Map: Natural Resources Conservation Service

Web Soil Survey URL: <http://websoilsurvey.nrcs.usda.gov>

Coordinate System: UTM Zone 15N NAD83

This product is generated from the USDA-NRCS certified data as of the version date(s) listed below.

Soil Survey Area: Union County, Arkansas

Survey Area Data: Version 9, Dec 2, 2008

Date(s) aerial images were photographed: Data not available.

The orthophoto or other base map on which the soil lines were compiled and digitized probably differs from the background imagery displayed on these maps. As a result, some minor shifting of map unit boundaries may be evident.



Map Unit Legend

Union County, Arkansas (AR139)			
Map Unit Symbol	Map Unit Name	Acres in AOI	Percent of AOI
AaA	Amy silt loam, 0 to 1 percent slopes, rarely flooded	102.1	30.7%
BbA	Bibb fine sandy loam, 0 to 1 percent slopes, frequently flooded	31.4	9.4%
GyA	Guyton silt loam, 0 to 1 percent slopes, frequently flooded	40.6	12.2%
HaC	Harleston fine sandy loam, 1 to 8 percent slopes	26.0	7.8%
OfA	Oil-waste land-Fluvaquents complex, 0 to 1 percent slopes, frequently flooded	27.9	8.4%
ScC	Sacul-Sawyer complex, 1 to 8 percent slopes	16.2	4.9%
W	Water	7.0	2.1%
WaC	Warnock fine sandy loam, 1 to 7 percent slopes	1.6	0.5%
WsC	Warnock-Smithdale complex, 1 to 7 percent slopes	80.1	24.1%
Totals for Area of Interest		333.0	100.0%



**ATTACHMENT 2
NATIONAL WETLANDS INVENTORY MAP**



U.S. Fish and Wildlife Service

National Wetlands Inventory

Norphlet, AR Site

Aug 8, 2012



Wetlands

- Freshwater Emergent
- Freshwater Forested/Shrub
- Estuarine and Marine Deepwater
- Estuarine and Marine
- Freshwater Pond
- Lake
- Riverine
- Other

This map is for general reference only. The US Fish and Wildlife Service is not responsible for the accuracy or currentness of the base data shown on this map. All wetlands related data should be used in accordance with the layer metadata found on the Wetlands Mapper web site.

User Remarks:

05000123

ATTACHMENT G
DIGITAL PHOTOGRAPHS

ATTACHMENT H

SITE LOGBOOKS

ATTACHMENT I
ANALYTICAL REPORT - REGION 6 LABORATORY

ATTACHMENT J
ANALYTICAL REPORT – TEST AMERICA LABORATORY

ATTACHMENT K

ANALYTICAL REPORT – BEACON ENVIRONMENTAL SERVICES LABORATORY



The Leaders in Soil Gas Surveys
and Vapor Intrusion Monitoring

Weston Solutions, Inc.
3900 Dallas Parkway, Suite 175
Plano, TX 75093
Attn: Ms. Michelle Brown

Passive Soil Gas Survey – Analytical Report
Date: December 14, 2012

Beacon Project No. 2563

Project Reference:	Norphlet Chemical, Norphlet, AR
Samplers Installed:	August 8, 2012
Samplers Retrieved:	August 16, 2012
Samples Received:	August 17, 2012
Analyses Completed:	August 17, 2012
Laboratory Data Issued:	August 23, 2012

EPA Method 8260C (Modified)

All samples were successfully analyzed using thermal desorption-gas chromatography/mass spectrometry (TD-GC/MS) instrumentation to target a custom compound list following EPA Method 8260C. Laboratory results are reported in nanograms (ng) of specific compound per sample.

Laboratory QA/QC procedures included internal standards, surrogates, and blanks based on EPA Method 8260C. Analyses and reporting were in accordance with BEACON's Quality Assurance Project Plan.

Reporting limits

The contract required quantification limit (CRQL) is 25 nanograms (ng) for individual compounds and 5,000 ng for Total Petroleum Hydrocarbons (TPH). **Table 1** provides survey results in nanograms per sampler by sample-point number and compound name. The CRQLs represent a baseline above which results exceed laboratory-determined limits of precision and accuracy. Any field sample measurements above the upper calibration standard are estimated; however, these values are reported without qualifiers because all reported measurements are relative to each other and are appropriate to meet the survey objectives of locating source areas and vapor intrusion pathways and defining the lateral extent of contamination.

Calibration Verification

The continuing calibration verification (CCV) values for the calibration check compounds were all within $\pm 20\%$ of the true values as defined by the initial five-point calibration and met the requirements specified in Beacon Environmental's Quality Assurance Project Plan.

Method Blanks/Trip Blanks

Laboratory method blanks are run with each sample batch to identify contamination present in the laboratory. If contamination is detected on a method blank, measurements of identical compounds in that sample batch are flagged in the laboratory report. The laboratory method blank analyzed in connection with the present samples revealed no contamination.

The trip blank is a sampler prepared, transported, and analyzed with other samples but intentionally not exposed. Any target compounds identified on the trip blanks are reported in the laboratory data. The analysis of the trip blank (labeled Trip-1 in **Table 1**) reported none of the targeted compounds.

Passive Soil-Gas Survey Notes

When sample locations are covered with or near the edge of an artificial surface (*e.g.*, asphalt or concrete), the concentrations of compounds in soil gas are often significantly higher than the concentrations would be if the surfacing were not present. Thus, a reading taken below or near an impermeable surface is much higher than it would be in the absence of such a cap. Therefore, the sample location conditions should be evaluated when comparing results between locations.

Survey findings are exclusive to this project and when the spatial relationships are compared with results of other BEACON Surveys it is necessary to incorporate survey and site information from both investigations (*e.g.*, depth to sources, soil types, porosity, soil moisture, presence of impervious surfacing, sample collection times). BEACON recommends the guidelines stated in **Attachment 1** to establish a relationship between reported soil-gas measurements and actual subsurface contaminant concentrations, which will indicate those measurements representing significant subsurface contamination.

BEACON's passive soil-gas samplers are prepared with two sets of adsorbent cartridges for subsequent duplicate or confirmatory sample analysis. At WESTON's request, duplicate analysis was performed for one (1) field sample; designated with "DUP" following the sample number. When comparing quantitative results, a duplicate correspondence should be considered when the relative percent difference (RPD) between the two samples is less than or equal to 100%. For the purpose of calculating correspondences, all non-detections should be assigned, as a baseline value, the CRQL for the specific contaminant. No compounds were reported on the base sample or field sample duplicate.

Project Details

Samplers were deployed on August 8, 2012, and were retrieved on August 16, 2012. **Attachment 2** describes the field procedures used. Individual deployment and retrieval times will be found in the Field Deployment Report (**Attachment 3**).

Ten (10) field samples, one (1) field sample duplicate, and one (1) trip blank were received by BEACON on August 17, 2012. Adsorbent cartridges from the passive samplers were thermally desorbed, then analyzed using gas chromatography/mass spectrometry (GC/MS) equipment, in accordance with EPA Method 8260C (Modified), as described in **Attachment 4**. BEACON's laboratory analyzed each sample for the targeted compounds; analyses were completed on August 17, 2012. Following a laboratory review, results were provided to WESTON on August 23, 2012. The Chain-of-Custody form, which was shipped with the samples for this survey, is supplied as **Attachment 5**.

Sample locations are shown on **Figure 1**. The following table lists frequency of detections based on the number of field samples analyzed, the reporting limit, and the maximum value for each mapped compound. The table also includes the transformation and interpolation method for the compound distribution maps provided.

Figure No.	2	3
Compound	Toluene	TPH C ₁₀ -C ₁₅
Frequency	1	1
Reporting Limit (nanograms)	25	5,000
Max Value (nanograms)	27	5,565
Transformation Method	None	None
Interpolation Method	Kriging	Kriging

Attachments:

- 1- Applying Results From Passive Soil-Gas Surveys
- 2- Field Procedures
- 3- Field Deployment Report
- 4- Laboratory Procedures
- 5- Chain-of-Custody Form

ALL DATA MEET REQUIREMENTS AS SPECIFIED IN THE BEACON ENVIRONMENTAL SERVICES, INC. QUALITY ASSURANCE PROJECT PLAN AND THE RESULTS RELATE ONLY TO THE SAMPLES REPORTED. BEACON ENVIRONMENTAL SERVICES IS ACCREDITED TO ISO 17025:2005, AND THE WORK PERFORMED WAS IN ACCORDANCE WITH ISO 17025 REQUIREMENTS. THIS REPORT SHALL NOT BE REPRODUCED EXCEPT IN FULL, WITHOUT THE WRITTEN APPROVAL OF THE LABORATORY. RELEASE OF THE DATA CONTAINED IN THIS HARDCOPY DATA PACKAGE HAS BEEN AUTHORIZED BY THE LABORATORY DIRECTOR OR HIS SIGNEE, AS VERIFIED BY THE FOLLOWING SIGNATURES:



Steven C. Thornley
Laboratory Director



Patti J. Riggs
Quality Manager

Table 1

Beacon Environmental Services, Inc.
323 Williams Street
Bel Air, MD 21014 USA

Analysis by EPA Method 8260C (Modified)

Client Sample ID:	mb120817a	Trip-1	PSG-01	PSG-02	PSG-03	PSG-04
Project Number:		2563	2563	2563	2563	2563
Lab File ID:	A12081703	A12081705	A12081706	A12081707	A12081708	A12081709
Received Date:	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012
Analysis Date:	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012
Analysis Time:	11:21	12:19	12:41	13:04	13:27	13:50
Matrix:			Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<25	<25	<25	<25	<25	<25
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	27	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C ₅ -C ₉	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C ₁₀ -C ₁₅	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000

Results in nanograms (ng). B = Detected in method blank.

05000132

Table 1

Beacon Environmental Services, Inc.
323 Williams Street
Bel Air, MD 21014 USA

Analysis by EPA Method 8260C (Modified)

Client Sample ID:	PSG-05	PSG-05 DUP	PSG-06	PSG-07	PSG-08	PSG-09
Project Number:	2563	2563	2563	2563	2563	2563
Lab File ID:	A12081710	A12081711	A12081712	A12081713	A12081714	A12081715
Received Date:	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012
Analysis Date:	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012	8/17/2012
Analysis Time:	14:12	14:35	14:58	15:21	15:43	16:06
Matrix:	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas	Soil Gas
Units:	ng	ng	ng	ng	ng	ng
COMPOUNDS						
Vinyl Chloride	<25	<25	<25	<25	<25	<25
Trichlorofluoromethane (Freon 11)	<25	<25	<25	<25	<25	<25
1,1-Dichloroethene	<25	<25	<25	<25	<25	<25
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25	<25	<25	<25	<25	<25
trans-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Methyl-t-butyl ether	<25	<25	<25	<25	<25	<25
1,1-Dichloroethane	<25	<25	<25	<25	<25	<25
cis-1,2-Dichloroethene	<25	<25	<25	<25	<25	<25
Chloroform	<25	<25	<25	<25	<25	<25
1,2-Dichloroethane	<25	<25	<25	<25	<25	<25
1,1,1-Trichloroethane	<25	<25	<25	<25	<25	<25
Carbon Tetrachloride	<25	<25	<25	<25	<25	<25
Benzene	<25	<25	<25	<25	<25	<25
Trichloroethene	<25	<25	<25	<25	<25	<25
1,4-Dioxane	<25	<25	<25	<25	<25	<25
1,1,2-Trichloroethane	<25	<25	<25	<25	<25	<25
Toluene	<25	<25	<25	<25	<25	<25
1,2-Dibromoethane (EDB)	<25	<25	<25	<25	<25	<25
Tetrachloroethene	<25	<25	<25	<25	<25	<25
1,1,1,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
Chlorobenzene	<25	<25	<25	<25	<25	<25
Ethylbenzene	<25	<25	<25	<25	<25	<25
p & m-Xylene	<25	<25	<25	<25	<25	<25
1,1,2,2-Tetrachloroethane	<25	<25	<25	<25	<25	<25
o-Xylene	<25	<25	<25	<25	<25	<25
1,2,3-Trichloropropane	<25	<25	<25	<25	<25	<25
Isopropylbenzene	<25	<25	<25	<25	<25	<25
1,3,5-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trimethylbenzene	<25	<25	<25	<25	<25	<25
1,3-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,4-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2-Dichlorobenzene	<25	<25	<25	<25	<25	<25
1,2,4-Trichlorobenzene	<25	<25	<25	<25	<25	<25
Naphthalene	<25	<25	<25	<25	<25	<25
1,2,3-Trichlorobenzene	<25	<25	<25	<25	<25	<25
2-Methylnaphthalene	<25	<25	<25	<25	<25	<25
TPH C ₅ -C ₉	<5,000	<5,000	<5,000	<5,000	<5,000	<5,000
TPH C ₁₀ -C ₁₅	<5,000	<5,000	<5,000	<5,000	5,565	<5,000

Results in nanograms (ng). B = Detected in method blank.

05000133

Table 1

Beacon Environmental Services, Inc.
323 Williams Street
Bel Air, MD 21014 USA

Analysis by EPA Method 8260C (Modified)

Client Sample ID: PSG-10
Project Number: 2563
Lab File ID: A12081716
Received Date: 8/17/2012
Analysis Date: 8/17/2012
Analysis Time: 16:29
Matrix: Soil Gas
Units: ng

COMPOUNDS

Vinyl Chloride	<25
Trichlorofluoromethane (Freon 11)	<25
1,1-Dichloroethene	<25
1,1,2-Trichlorotrifluoroethane (Fr.113)	<25
trans-1,2-Dichloroethene	<25
Methyl-t-butyl ether	<25
1,1-Dichloroethane	<25
cis-1,2-Dichloroethene	<25
Chloroform	<25
1,2-Dichloroethane	<25
1,1,1-Trichloroethane	<25
Carbon Tetrachloride	<25
Benzene	<25
Trichloroethene	<25
1,4-Dioxane	<25
1,1,2-Trichloroethane	<25
Toluene	<25
1,2-Dibromoethane (EDB)	<25
Tetrachloroethene	<25
1,1,1,2-Tetrachloroethane	<25
Chlorobenzene	<25
Ethylbenzene	<25
p & m-Xylene	<25
1,1,2,2-Tetrachloroethane	<25
o-Xylene	<25
1,2,3-Trichloropropane	<25
Isopropylbenzene	<25
1,3,5-Trimethylbenzene	<25
1,2,4-Trimethylbenzene	<25
1,3-Dichlorobenzene	<25
1,4-Dichlorobenzene	<25
1,2-Dichlorobenzene	<25
1,2,4-Trichlorobenzene	<25
Naphthalene	<25
1,2,3-Trichlorobenzene	<25
2-Methylnaphthalene	<25
TPH C ₅ -C ₉	<5,000
TPH C ₁₀ -C ₁₅	<5,000

Results in nanograms (ng). B = Detected in method blank.

05000134



BEACON
ENVIRONMENTAL
SERVICES, INC.

323 Williams Street, Bel Air, MD, 21014, USA 1-410-838-8780
Beacon Project No. 2563, December 2012

LEGEND

▲ PASSIVE SOIL-GAS SAMPLE LOCATION
PSG-08

Figure 1
Passive Soil-Gas Survey
Sample Locations

Norphlet Chemical
Norphlet, AR

05000135



**BEACON
ENVIRONMENTAL
SERVICES, INC.**

323 Williams Street, Bel Air, MD, 21014, USA 1-410-838-8780
Beacon Project No. 2563, December 2012

LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION

PSG-08

Figure 2
Passive Soil-Gas Survey
Toluene

Norphlet Chemical
Norphlet, AR

05000136



**BEACON
ENVIRONMENTAL
SERVICES, INC.**

323 Williams Street, Bel Air, MD, 21014, USA 1-410-838-8780
Beacon Project No. 2563, December 2012

LEGEND

1,000 NANOGRAMS/SAMPLER

▲ PASSIVE SOIL-GAS SAMPLE LOCATION

Figure 3
Passive Soil-Gas Survey
TPH C10-C15

Norphlet Chemical
Norphlet, AR

05000137

Attachments

Attachment 1

APPLYING RESULTS FROM PASSIVE SOIL-GAS SURVEYS

The utility of soil-gas surveys is directly proportional to their accuracy in reflecting and representing changes in the subsurface concentrations of source compounds. Passive soil-gas survey results are the mass collected from the vapor-phase emanating from the source(s). The vapor-phase is merely a fractional trace of the source(s) and, as a matter of convenience, the units used in reporting detection values from passive soil-gas surveys are smaller than those employed for source-compound concentrations.

Passive soil gas data are reported in mass of compounds identified per sample location (e.g., nanograms (ng) or micrograms (μ g) per sampler). Results from a passive soil gas survey typically are then used to guide where follow-on intrusive samples should be collected to obtain corresponding concentrations of the contaminants in soil, soil gas, and/or groundwater, as well as eliminate those areas where intrusive samples are not required. It is not practical to report passive soil gas data as concentration because the sampler's uptake rates of the compounds are often greater than the replenishment rates of the compounds around the sampler, which results in low bias measurements, and the replenishment rates will be dependent on several factors that include, at a minimum, soil gas concentrations, soil porosity and permeability, and soil moisture level.

Whatever the relative concentrations of source and associated soil gas, best results are realized when the ratio of soil-gas measurements to actual subsurface concentrations remains as close to constant as the real world permits. It is the reliability and consistency of this ratio, not the particular units of mass (e.g., nanograms) that determine usefulness. Thus, BEACON emphasizes the necessity of conducting — at minimum — follow-on intrusive sampling in areas that show relatively high soil-gas measurements to obtain corresponding concentrations of soil and groundwater contaminants. These correspondent values furnish the basis for approximating a relationship. For extrapolating passive soil gas results to vapor intrusion evaluations, we recommend a minimum of three passive soil gas locations be converted to a shallow vapor well then sampled using an active soil gas method. Once a relationship is established, it can be used in conjunction with the remaining soil-gas measurements to estimate subsurface contaminant concentrations across the survey field. (See www.beacon-usa.com/passivesoilgas.html, Publication 1: *Mass to Concentration Tie-In for PSG Surveys* and Publication 4: *Groundwater and PSG Correlation*.) It is important to keep in mind, however, that specific conditions at individual sample points, including soil porosity and permeability, depth to contamination, and perched ground water, can have an impact on soil-gas measurements at those locations.

When passive soil-gas surveys are utilized as described above, the data provide information that can yield substantial savings in drilling costs and in time. They furnish, among other things, a checklist of compounds expected at each survey location and help to determine how and where drilling budgets can most effectively be spent. Passive soil-gas surveys can also be used as a remediation or general site monitoring tool that can be implemented on a quarterly, semi-annual or annual basis.

Attachment 2

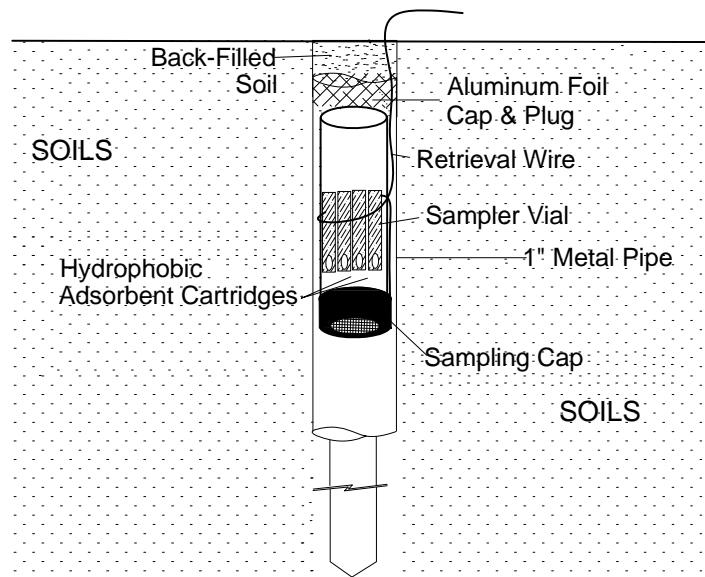
FIELD PROCEDURES FOR PASSIVE SOIL-GAS SURVEYS

The following field procedures are routinely used during a BEACON Passive Soil-Gas Survey. Modifications can be and are incorporated from time to time in response to individual project requirements. In all instances, BEACON adheres to EPA-approved Quality Assurance and Quality Control practices.

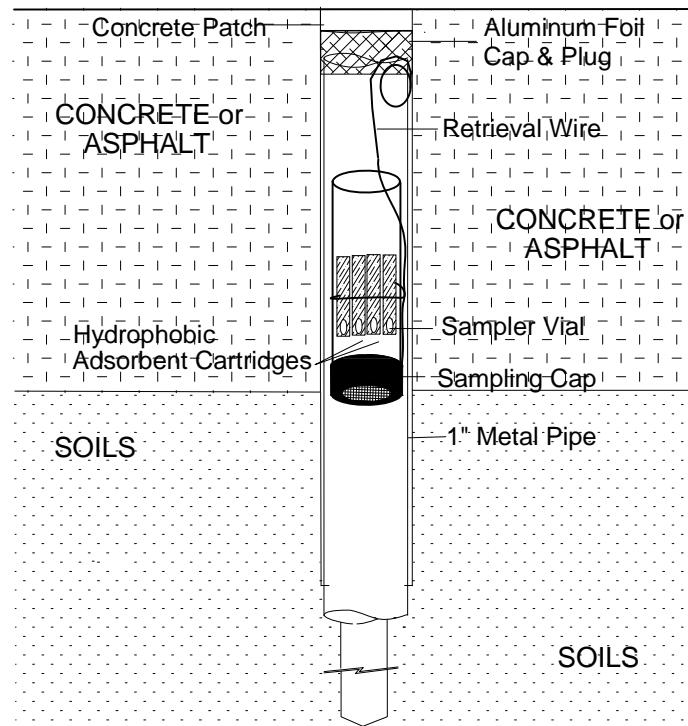
- A. Field personnel carry a BESURE Sample Collection Kit™ and support equipment to the site and deploy the passive samplers in a prearranged survey pattern. A passive sampler consists of a borosilicate glass vial containing hydrophobic adsorbent cartridges with a length of wire attached to the vial for retrieval. Although samplers require only one person for emplacement and retrieval, the specific number of field personnel required depends upon the scope and schedule of the project. Each Sampler emplacement generally takes less than two minutes.
- B. At each survey point a field technician clears vegetation as needed and, using a hammer drill with a 1"- to 1½"-diameter bit, creates a hole 12 to 14 inches deep. [Note: For locations covered with asphalt, concrete, or gravel surfacing, the field technician drills a 1"- to 1½"-diameter hole through the surfacing to the soils beneath]. The technician then, using a hammer drill with a ½" diameter bit, creates a hole three-feet deep. The hole is then sleeved with a 1"-diameter metal sleeve.
- C. The technician then removes the solid plastic cap from a sampler and replaces it with a Sampling Cap (a plastic cap with a hole covered by screen meshing). The technician inserts the sampler, with the Sampling Cap end facing down, into the hole (see **attached figure**). The sampler is then covered with an aluminum foil plug and soils for uncapped locations or, for capped locations, an aluminum foil plug and a concrete patch. The sampler's location, time and date of emplacement, and other relevant information are recorded on the Field Deployment Form.
- D. One or more trip blanks are included as part of the quality-control procedures.
- E. Once all the samplers have been deployed, field personnel schedule sampler recovery and depart, taking all other equipment and materials with them.
- F. Field personnel retrieve the samplers at the end of the exposure period. At each location, a field technician withdraws the sampler from its hole, removes the retrieval wire, and wipes the outside of the vial clean using gauze cloth; following removal of the Sampling Cap, the threads of the vial are also cleaned. A solid plastic cap is screwed onto the vial and the sample location number is written on the label. The technician then records sample-point location, date, time, etc. on the Field Deployment Form.
- G. Sampling holes are refilled with soil, sand, or other suitable material. If samplers have been installed through asphalt or concrete, the hole is filled to grade with a plug of cold patch or cement.
- H. Following retrieval, field personnel ship or transport the passive samplers to BEACON's laboratory.

BEACON'S PASSIVE SOIL-GAS SAMPLER

DEPLOYMENT THROUGH SOILS



DEPLOYMENT THROUGH AN ASPHALT/CONCRETE CAP



Attachment 3

Field Deployment Report

PASSIVE SOIL-GAS SURVEY FIELD DEPLOYMENT REPORT

Project Information	
Beacon Project No.:	2563
Site Name:	Norphlet Chemical
Site Location:	Norphlet, AR



Client Information	
Company Name:	Weston Solutions, Inc.
Office Location:	Plano, TX
Samples Collected By:	m. willis

Attachment 4

LABORATORY PROCEDURES FOR PASSIVE SOIL-GAS SAMPLES

Following are laboratory procedures used with BEACON Passive Soil-Gas Surveys, a screening technology for expedited site investigation. After exposure, adsorbent cartridges from the passive samplers are analyzed using U.S. EPA Method 8260C as a guidance document, a capillary gas chromatographic/mass spectrometric method, modified to accommodate high temperature thermal desorption of the adsorbent cartridges and to meet the objectives of reporting semi-quantitative data. This procedure is summarized as follows:

- A. The adsorbent cartridges are loaded with internal standards and surrogates prior to loading the autosampler with the cartridges. The loaded cartridges are purged in a helium flow. Then the cartridges are thermally desorbed in a helium flow onto a focusing trap. Any analytes in the helium stream are adsorbed onto a focusing trap.
- B. Following trap focusing, the trap is thermally desorbed onto a Rxi-624Sil MS 20m, 0.18 mm ID, 1.00 micron filament thickness capillary column.
- C. The GC/MS is scanned between 35 and 270 Atomic Mass Units (AMU) at 3.12 scans per second.
- D. BFB tuning criteria and the initial five-point calibration procedures are those stated in method SW846-8260C. System performance and calibration check criteria are met prior to analysis of samples. A laboratory method blank is analyzed after the daily standard to determine that the system is contaminant-free.
- E. The instrumentation used for these analyses includes:
 - Agilent 6890-5973a Gas Chromatograph/Mass Spectrometer;
 - Markes Unity thermal desorber;
 - Markes UltraA autosampler; and
 - Markes Mass Flow Controller Modules

Attachment 5

Chain-of-Custody Form

ATTACHMENT L

TDD NO. TO-0019-12-03-01 AND AMENDMENTS

CHAIN-OF-CUSTODY PASSIVE SOIL-GAS SAMPLES

Project Information		Client Information	
Beacon Project No.:	2563	Company Name:	Weston Solutions, Inc.
Site Name:	Norphlet Chemical	Office Location:	Plano, TX
Site Location:	Norphlet, AR	Samples Submitted By:	Michelle Brown 972 977 2644
Analytical Method:	EPA Method 8260C	Contact Phone No.:	
Target Compounds:	Beacon Project Number 2563 Target Compound List		

Shipment of Field Kit to Site — Custody Seal #		17350207	Intact? <input checked="" type="radio"/> Y <input type="radio"/> N	
Relinquished by:	Date/Time	Courier	Received by:	Date/Time
Kenny Treado	08-01-2012 / 1700 Hours	FedEx	meagan williams ST	8/7/2012 1600

Shipment of Field Kit to Laboratory — Custody Seal # 17350208 Intact? Y N
Relinquished by: Date/Time Courier Received by: Date/Time
Margaux Willis 8/14/2012 1400 FedEx *Steven Thornley* 8/17/2012 / 1000
05000147